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Paper 67
Date: March 31, 2022

PUBLIC VERSION

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

WEBER, INC.,
Petitioner,

v.

PROVISUR TECHNOLOGIES, INC.,
Patent Owner.

IPR2020-01556
Patent 10,625,436 B2

Before MITCHELL G. WEATHERLY, FRANCES L. IPPOLITO, and JON M. JURGOVAN, *Administrative Patent Judges.*

JURGOVAN, *Administrative Patent Judge.*

JUDGMENT
Final Written Decision
Determining No Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

A. Background

Weber, Inc. ("Petitioner") filed a Petition (Paper 2, "Pet.") requesting *inter partes* review of claims 1–16 of U.S. Patent No. 10,625,436 B2 (Ex. 1001, "the '436 Patent"). Provisur Technologies, Inc. ("Patent Owner") filed a Preliminary Response. Paper 8 ("Prelim. Resp."). Applying the standard set forth in 35 U.S.C. § 314(a), we instituted review of claims 1–16 of the '436 Patent.

During trial, Patent Owner filed a Response (Paper 23, "Resp."), Petitioner filed a Reply (Paper 30), and Patent Owner filed a Sur-Reply (Paper 48).[1] Patent Owner also filed a Motion to Exclude (Paper 59), Petitioner filed an Opposition to the Motion to Exclude (Paper 60), and Patent Owner filed a Reply to Petitioner's Opposition (Paper 63).

An Oral Hearing took place on December 16, 2021. The Hearing Transcript is included in the record. Paper 64 ("Tr.").

After considering the parties' arguments and supporting evidence, we determine that Petitioner has not proved by a preponderance of the evidence that claims 1–16 are unpatentable. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d) (2020).

B. Real Parties in Interest

Petitioner identifies the following entities as real parties in interest: Textor, Inc.; Weber Maschinenbau GmbH Breidenbach; Weber Maschinenbau GmbH Neubrandenburg; and Textor Maschinenbau GmbH.

[1] Patent Owner also submitted redacted versions of its Preliminary Response, Response, and Sur-Reply. Papers 8, 24, 49. The redactions relate to information subject to our Protective Orders. Papers 12, 58.

Pet. 80. Patent Owner identifies Provisur Technologies, Inc. as the sole real party in interest. Paper 5, 1.

C. Related Matters

The parties list as related matters *Provisur Technologies, Inc. v. Weber, Inc. et al*, Case No. 5-20-cv-06069 (MOWD); and IPR2020-01557, which challenges U.S. Patent No. 10,639,812 B2, and which, like the '436 Patent, is a division of U.S. Application No. 13/099,325 filed May 2, 2011. Pet. 80; Paper 5, 1.

D. Summary of the '436 Patent

The '436 patent describes a high speed slicing machine for slicing food articles. Ex. 1001, codes (54), (57). The '436 patent explains in its background section that high speed slicing machines for food articles can be configured as an automatically loaded, continuous feed machine, or a back-clamp or gripper type slicing machine. Ex. 1001, 1:36–45. The '436 patent explains that "it would be desirable to slice plural food articles with independent feeding and weighing capabilities, with hygienic and operational enhancements." *Id.* at 2:37–40.

Figure 1B is reproduced below:

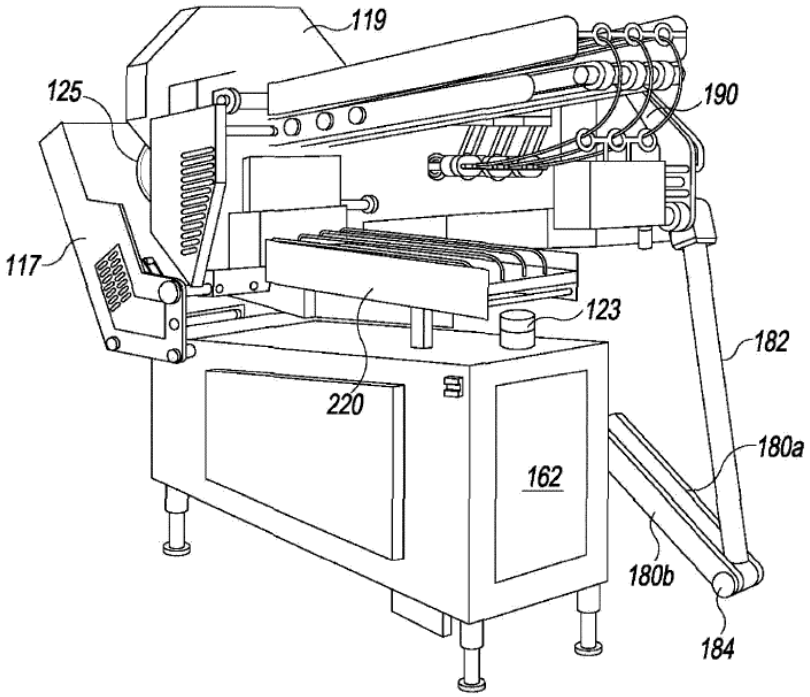


Fig. 1B

Figure 1B illustrates a slicing machine. *Id.* at 3:31–32.

The slicing machine illustrated in Figure 1B includes food article feed mechanism frame 190, slicing blade 125, and guard 119. *Id.* at 5:14–31. "[T]he elevation of the food article feed apparatus [120, not labeled in Figure 1B] can be adjusted by using the servomotor to selectively pivot the levers 180a, 180b and lower the rear of the frame 190." *Id.* at 5:29–32. An automatic food article loading apparatus includes lift tray assembly 220, which receives the food articles to be sliced. *See id.* at 9:15–22. "[T]ray positioning apparatus [not labeled in Figure 1B] pivots the tray assembly 220 to be parallel with, and below the food article feed apparatus 120 in a staging position." *Id.*

Figure 8 is reproduced below:

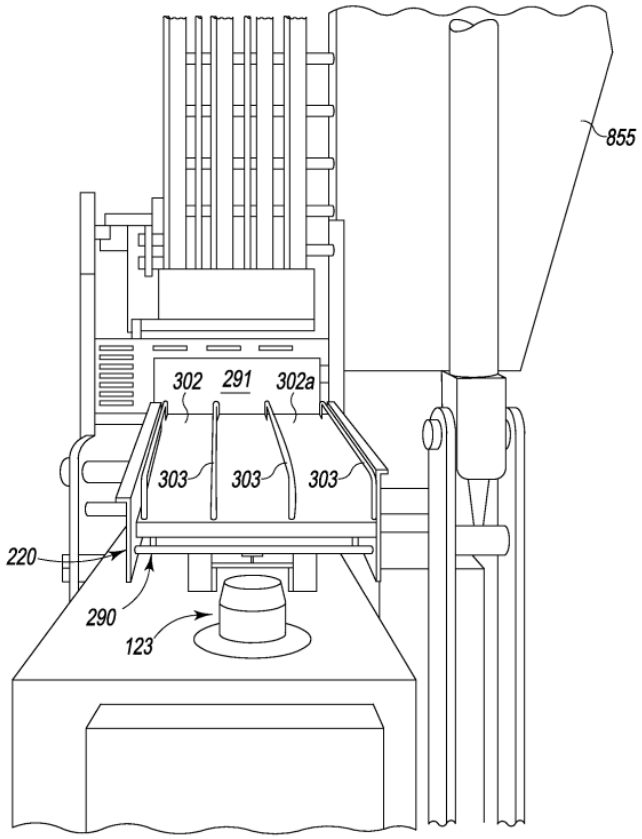


Fig. 8

Figure 8 is a rear perspective view of the slicing machine. *Id.* at 3:64–65.

As shown in Figure 8, lift tray assembly 220 includes frame 290 that supports a movable food article support tray 302. *Id.* at 9:23–32. Frame 290 includes end plate 291. *Id.* Food articles are loaded onto tray 302 until they abut end plate 291. *Id.* Tray 302 includes four spaced-apart guard rails 303 that define three lanes corresponding to three feed paths for the slicing machine. *Id.* Three servomotors are located within upper compartment 855 that is supported by frame 190. *Id.* at 6:7–10.

Figure 7A is reproduced below:

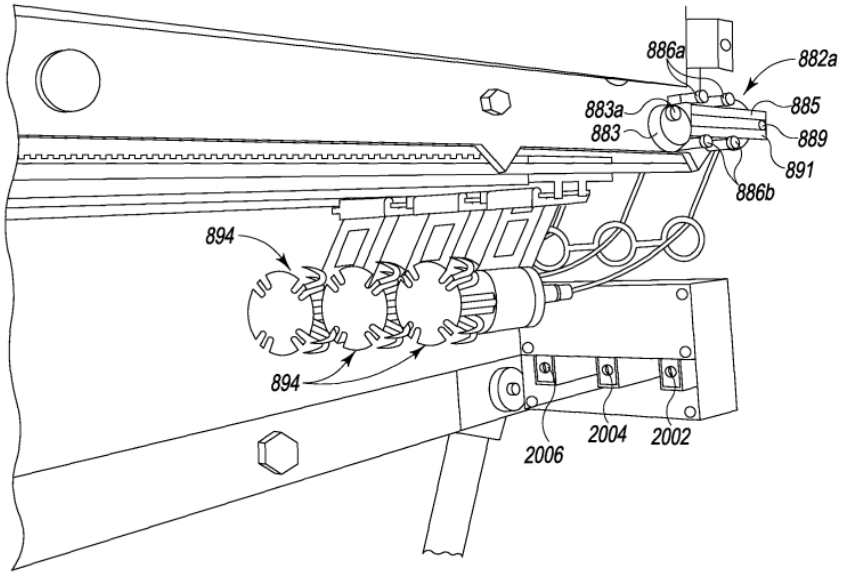


Fig. 7A

Figure 7A is a fragmentary perspective view illustrating a gripper and sensors sensing ends of food articles in a food article support tray. *Id.* at 3:50–54, 6:23–29, 10:16–29.

As shown in Figure 7A, adjustable cam belt tension adjustment mechanism 882a includes fork 885 braced by adjustable cam 883, and the fork is guided by upper and lower pins 886a, 886b to slide rearward and forward. *Id.* at 6:13–22. Gripper 894 is translated along the food article feed path by a belt. *Id.* at 6:23–29. Sensors 2002, 2004, 2006 sense the ends of each food article in the three lanes on the tray 302, and communicate that information to the machine control. *Id.* at 10:16–29. "By knowing the exact end of the food article, the grippers know when to be activated to seize the food article." *Id.*

E. Illustrative Claims

Petitioner challenges claims 1–16, which are all of the claims in the '436 patent. Claims 1 and 9 are the only independent claims. Claims 2–8 depend from claim 1, and claims 10–16 depend from claim 9. Claims 1 and 9 are reproduced below, with brackets noting Petitioner's identifiers:

> 1. [1.p] A food article slicing machine, comprising:
> [1.1] a food article loading apparatus with a lift tray assembly for moving food articles from a staging position to an elevated position at a beginning of a food article feed path;
> [1.2] a food article feed apparatus disposed over the food article loading apparatus having an upper conveyor assembly with a driven endless conveyor belt used in cooperation with a food article gripper for moving the food articles along the food article feed path;
> [1.3] a slicing station at an end of the food article feed path with a knife for slicing the food articles; and
> [1.4] a food article stop gate disposed upstream of the slicing station that forms a portion of the food article feed path,
> [1.5] wherein the food articles are supported in position along the food article feed path by at least the food article stop gate when the lift tray assembly is moved when in its elevated position, and
> [1.6] wherein the food article stop gate also opens to drop food article end portions.

Ex. 1001, 10:56–11:8 (bracketed labels added for ease of discussion).

> 9. [9.p] A food article slicing machine, comprising:
> [9.1] a slicing station comprising a knife blade and a knife blade drive driving the blade along a cutting path in a cutting plane;
> [9.2] a food article loading apparatus including a lift tray assembly moveable between a staging position and an elevated position, the elevated position being a position where food articles disposed within the lift tray assembly are in a food article feed path;

> [9.3] a food article feed apparatus disposed over said food article loading apparatus and having a conveyor assembly with independently driven endless conveyor belts,
>
> [9.4] wherein each of the conveyor belts is used in cooperation with an independently driven and controlled food article gripper for moving a food article along the food article feed path, and
>
> [9.5] wherein the conveyor assembly is an upper conveyor assembly; and
>
> [9.6] a food article stop gate disposed upstream of the slicing station that forms a portion of the food article feed path,
>
> [9.7] wherein the food articles are supported in position along the food article feed path by at least the food article stop gate when the lift tray assembly is moved when in its elevated position, the food articles passing over the food article stop gate when the food articles move along the food article feed path, and
>
> [9.8] wherein the food article stop gate also serves as a door for the removal of food article end portions.

Ex. 1001, 11:30–12:16 (bracketed labels added for ease of discussion).

F. Asserted Grounds

Petitioner contends that the challenged claims are unpatentable based on the following grounds:

Claims Challenged	35 U.S.C. §[2]	References/Basis
1–16	103	2006 904 manual[3] and Lindee[4]

[2] The Leahy-Smith America Invents Act, Pub. L. No. 112–29, 125 Stat. 284 (2011) ("AIA"), included revisions to 35 U.S.C. §§ 102 and 103 that became effective after the effective filing date of the challenged claims. Therefore, we apply the pre-AIA version of 35 U.S.C. §§ 102 and 103.

[3] *Operating Manual: Slicer CCS 904* (English Language Translation), CCS-904_06_2006-07-01_GB / T-07_2005-11-10, by Weber Group, 1–288 (Ex. 1005) asserted as prior art under pre-AIA § 102(b). Pet. 26.

[4] US 5,628,237, issued May 13, 1997 (Ex. 1006) asserted as prior art under pre-AIA § 102(b). Pet. 27.

Claims Challenged	35 U.S.C. §[2]	References/Basis
1–16	103	2010 904 manual[5] and Lindee

Pet. 26–27. In support of its proposed grounds, Petitioner relies on the Declaration of Richard Hooper, Ph.D. *See* Ex. 1003.

II. LEVEL OF ORDINARY SKILL IN THE ART

Petitioner proposes that a person of ordinary skill in the art would have had "(1) a bachelor's degree (or equivalent) in mechanical engineering (or a similar field) and at least two years of experience working on food processing and/or packaging systems (or in a similar field)" or "(2) at least seven years of experience working on food processing and/or packaging systems (or in a similar field)." Pet. 18 (citing Ex. 1003 ¶ 26). Patent Owner does not contest Petitioner's definition or provide its own proposal. For purposes of this Decision, we adopt Petitioner's proposal because Petitioner's proposed definition is consistent with the level of skill demonstrated in the cited prior art references. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

III. CLAIM CONSTRUCTION

"In an *inter partes* review proceeding, a claim of a patent . . . shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b)." 37 C.F.R. § 42.100(b) (2019). That standard "includ[es] construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history

[5] *Operating Manual for the Slicer CCS 904-02 (for product lengths to 1200 mm / 1600 mm)* (English Language Translation), by Weber Group, 1–259 (Ex. 1009) asserted as prior art under pre-AIA § 102(a). Pet. 27.

pertaining to the patent." *Id.*; *see also Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). Only terms that are in controversy need to be construed, and then only to the extent necessary to resolve the controversy. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

We find that only one phrase is in dispute, namely, "a food article feed apparatus *disposed over* said food article loading apparatus." Pet. 33–35, 61; Resp. 45–49; Reply 15–17; Sur-Reply 16–18 (emphasis added).

A. Petitioner's Contentions

Petitioner contends that the combinations of the 2006 and 2010 904 Operating Manuals and Lindee disclose the claimed feature of a food article feed apparatus "disposed over" a food article loading apparatus. Pet. 32–35; Reply 15–19 (citing Ex. 1005, Fig. 5). Petitioner contends that, in the prior art combinations, the food article feed apparatus comprises the 2006 and 2010 904 Operating Manuals' product holder, upper product guide, and related structure and actuators, as well as Lindee's timing belt system. Petitioner further contends the food article loading apparatus includes the 2006 and 2010 904 Operating Manuals' product conveyor, timing belt and related actuators and supporting structure, and Lindee's lift tray and corresponding actuators and support structure. *Id.*

Petitioner contends that the term "disposed over" does not require vertical alignment of the feed apparatus to the loading apparatus. Reply 15. Even if it does, Petitioner contends that it "never proposed placing belts anywhere other than directly over the loading apparatus." Reply 15 (citing Pet. 44–45, 52–53).

Petitioner supports its position with the prosecution history of the '812 Patent, where the Examiner stated that the term "over" is broad and means "above" (not directly above), citing a dictionary definition from Merriam-Webster. Reply 17 (citing Ex. 1002, 208–209).

B. Patent Owner's Contentions

Patent Owner argues that, in Petitioner's combinations (*see* Section 1.F), the conveyor belts, which are components of the feed apparatus, are offset to the side of, and not disposed over, the loading apparatus. Resp. 45–49. Since limitation [1.2] of claim 1 of the '436 Patent requires the feed apparatus to be "disposed over" the loading apparatus, Patent Owner argues Petitioner's combinations fail to teach or suggest this limitation. *Id.* Patent Owner also contends Petitioner's combinations would result in conveyor belts that are out of the feed paths contrary to limitation [1.2] of claim 1. *Id.*

Patent Owner contends that Petitioner's claim construction that "disposed over" means merely "above" is incorrect. Sur-Reply 16. Patent Owner notes that the specification of the '436 Patent shows the upper conveyor assembly, a component of the feed apparatus (see Ex. 1001, 5:50–51), higher than and vertically in-line with the loading apparatus. *Id.* (citing Ex. 1001, Fig. 1B). Patent Owner contends that the specification distinguished prior machines with a feed apparatus (a "loaf sweep mechanism") located above but horizontally offset from the loading apparatus. *Id.* at 17 (Ex. 1001, 1:62–2:20). According to Patent Owner, the substantially vertically aligned stack of components envisioned by the inventors of the '436 Patent allowed for "operational enhancements" by reducing the footprint of the machine and increasing hygiene by creating a

more open configuration that can be easily cleaned. *Id.* at 17 (citing Ex. 1001, 2:37–40; Ex. 2019 ¶¶ 71–73).

Patent Owner acknowledges that the Examiner interpreted "disposed over" broadly as "above" during prosecution of the '436 Patent, but notes that the Examiner used the "broadest reasonable interpretation" standard, which is a different standard than used by the Board in *inter partes* reviews, which leads to a different interpretation. Sur-Reply 17–18 (citing MPEP § 2111; Ex. 1066, 208–209).

Patent Owner further states that multiple courts have rejected the broad construction of "over" to mean "above" as Petitioner proposes. Sur-Reply 18 (citing *Home Semiconductor Corp. v. Samsung Elecs. Co., Ltd.*, 701 F. App'x 1006, 1009–14 (Fed. Cir. 2017) (a layer "only 'above'" and "merely insignificantly overlapping" a second region, was not "over" that "region."); *Orion Energy Sys. Inc. v. Energy Bank, Inc.*, No. 16-C-1250, 2017 WL 4773301, *11–*12 (E.D. Wis. 2017) ("above" denotes direction, not positional, alignment ". . . 'provided substantially over' is understood to mean 'disposed in an overlaying relationship.'").

C. Analysis

From the foregoing, it is clear that the parties dispute the meaning of "disposed over" and we must construe the term. *See Nidec Motor*, *supra*.

"[T]he specification 'is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.'" *Phillips*, 415 F.3d at 1315.

Limitation [1.2] of claim 1 recites "a food article feed apparatus *disposed over* the food article loading apparatus having an upper conveyor assembly with a driven endless conveyor belt used in cooperation with a food article gripper for moving the food articles along the food article feed

path" (emphasis added). To understand what is meant by "disposed over," we examine how the specification describes the food article loading apparatus 108 and the food article feed apparatus 120 and their relationship to one another.

The specification of the '436 Patent describes the food article loading apparatus 108 to include a lift tray assembly 220 that moves between a staging position for loading food articles, and an elevated position bringing the food articles "in line" with respective feed paths to the slicing blade 125. Ex. 1001 at 2:53–55; 4:39–42; 9:15–56, Figs. 1, 1B, 8. The lift tray assembly 220 has three lanes corresponding to three feed paths, which are defined by four spaced-apart guard rails 303, although the lift tray assembly can be configured for "any number of paths." *Id.* at 9:2–4, 9:28–31, Figs. 1B, 8. In the staging position, food articles are loaded into the three lanes of the lift tray assembly 220. *Id.* at 9:27–28. Lift tray positioning apparatus 228 then pivots the lift tray assembly 220 to the elevated position. *Id.* at, 9:15–22, 9:45–51. In the elevated position, the lift tray 302 aligns the food articles in their feed paths to the slicing blade 125 so that no lateral shifting of food articles is required to position them. *Id.* at code (57), 2:52–55.

The '436 Patent describes the food article feed apparatus 120 as including an overhead conveyor assembly 530 with conveyor belts 802, 804, 806 and grippers 894 on their lower runs to engage with the ends of food articles to drive them along their feed paths toward the slicer. *Id.* at 2:55–56, 6:23–26, 7:1–7, 9:1–13, Figs. 2, 7, 7A, 7B, 7C. Since the range of movement of the grippers 894 define the feed paths of the food articles, the conveyor belts 802, 804, 806 that drive them are necessarily aligned to the feed paths. *Id.* at 6:23–26, 9:1–14.

Moreover, in either the staging position or the elevated position, the food article feed apparatus 120 and its overhead conveyor assembly 520 with conveyor belts 802, 804, 806 and grippers 894 is *vertically and laterally* aligned with the lift tray assembly 220 of food article loading apparatus 108. *Id.* at Figs. 1, 1B, 8. Vertically aligned means that the overhead conveyor assembly 520 of the feed apparatus 120 is directly above lift tray assembly 220 of the loading apparatus 108. Laterally aligned means that, when the feed apparatus 120 and loading apparatus 108 are viewed from above, there is no offset between the overhead conveyor assembly 520 of feed apparatus and the lift tray assembly 220 of the loading apparatus. This vertical and lateral alignment enables the lift tray assembly, when in its elevated position, to be positioned so that the lanes of the lift tray which guide the food articles are aligned with the feed paths of the grippers driven by respective conveyor belts. The grippers can thus engage with the ends of the food articles and drive them along their feed paths toward the slicer. *Id.* at 2:53–56.

Thus, in the '436 Patent, the overhead conveyor assembly and grippers of the feed apparatus are "disposed over" the lift tray assembly of the loading apparatus, which pivots between the staging position to load food articles, and the elevated position where the food articles are aligned to the feed paths below the feed apparatus and its conveyors and grippers which engage and drive the food articles into the slicer. *Id.* at 2:53–56.

From the foregoing, it is clear that the specification of the '436 Patent describes only one configuration for the loading apparatus 108 and the feed apparatus 120. That configuration positions the overhead conveyor assembly of the feed apparatus over the lift tray assembly of the loading apparatus in vertical and lateral alignment therewith, such that no lateral

shifting of food articles is required to load and feed them from the loading apparatus into the feed apparatus. Lateral shifting refers to loading food articles from the side of the feed apparatus, rather than from below, as described in the background section of the '436 Patent. Ex. 1001, 1:64–66.

Although the Examiner interpreted "disposed over" as meaning "above" (Ex. 1002, 208–209), Patent Owner is correct that the standard in prosecution is different from that that applies in this *inter partes* review. Sur-Reply 17–18. The standard in prosecution is broadest reasonable interpretation. *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1369 (Fed. Cir. 2004). In contrast, as noted, the standard here is the same as would be used in a civil action under 35 U.S.C. § 282(b). 37 C.F.R. § 42.100(b). This is often referred to as the *Phillips* standard after the Federal Circuit case that first introduced it.

Under the *Phillips* standard, claim terms must be construed in light of the specification in which they appear. *Phillips,* 415 F.3d at 1315. We find that interpreting "disposed over" as merely "above" without also requiring vertical and lateral alignment, as Petitioner proposes (Reply 16), is too broad in light of how the specification presents the relationship between the feed apparatus and loading apparatus in the '436 Patent. One of ordinary skill in the art would understand that, if the feed apparatus were vertically above but laterally offset from the load apparatus in the '436 Patent, when the lift tray is elevated, the conveyor belts and grippers of the feed apparatus would not be aligned with the feed paths and they would not contact the ends of the food articles to drive them toward the slicing station, as the '436 Patent teaches. *See* Ex. 1001 at code (57), 2:56–58, Fig. 1B. Furthermore, the '436 Patent manifestly excludes lateral shifting of food articles to load them. *Id.* at 2:55–56. This requires the upper conveyor assembly and grippers of the

feed apparatus to be vertically and laterally aligned with the lift tray assembly so that when the lift tray is pivoted to its elevated position, the conveyor belts and grippers and lanes of the lift tray are aligned with the feed paths to be traveled by the food articles.

Patent Owner's expert, Dr. William S. Howard, provides the annotated illustration of the '436 Patent's Figure 1B and a demonstrative schematic of Figure 1B, shown below. Ex. 2019 ¶ 70.

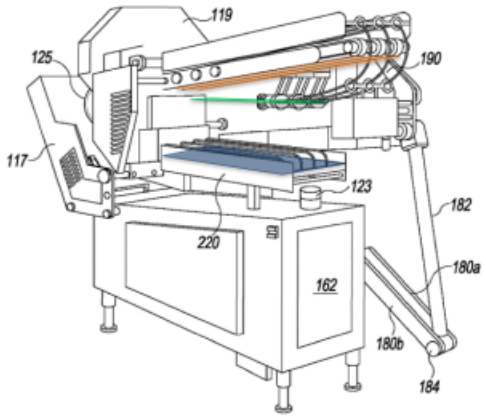
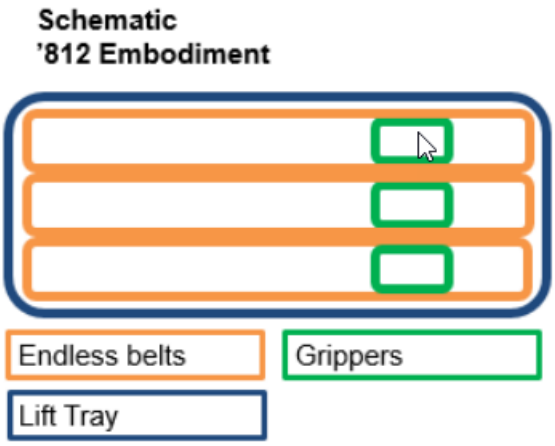


Fig. 1B

EX1001, FIG. 1B (ANNOTATED)



DEMONSTRATIVE SCHEMATIC

Dr. Howard's annotated Figure 1B of the '436 Patent and demonstrative schematic show the positional relationship between the lift tray assembly 220 (blue) of the food article loading apparatus 108 and the grippers 894 (green) and endless belts 802, 804, 806 (orange) of the food article feed apparatus 120, as illustrated above. Ex. 2019 ¶ 70.

In the annotated Figure 1B and the demonstrative schematic view of the machine above, the food article loading apparatus 108 including lift tray assembly 220 (annotated blue) is directly under the plane defined by the grippers 894 (annotated green) of the feed apparatus. *Id.* The endless belts 802, 804, 806 of the feed apparatus 120 (annotated orange) are directly above the plane of the grippers 894 of feed apparatus 120. *Id.* Dr. Howard

testifies that the feed apparatus 120 is disposed over the loading apparatus 108. *Id.* He further testifies that this arrangement would allow more independent feed paths to be added to the machine, and that overall footprint of the machine would be reduced, which is advantageous in food processing facilities, which tend to have limited floor space. *Id.* We agree with Dr. Howard's testimony that the endless conveyor belts 802, 804, 806 and grippers 894 of the food article feed apparatus 120 are "disposed over" the lift tray assembly 220 of the of the food article loading apparatus 108. *Id.* at ¶ 72.

Petitioner's expert, Dr. Richard Hooper, agrees with Petitioner's proposed construction of "disposed over" as meaning "above." Ex. 1051 ¶¶ 69–75. Dr. Hooper testifies that claim 1 of the '436 Patent recites "said food article feed apparatus *having* a conveyor assembly with independently driven endless conveyor belts." He testifies that a person of ordinary skill in the art would understand the word "having" to mean that the feed apparatus would include more elements such as motors and grippers, which allegedly are not "disposed over" the loading apparatus. *Id.* ¶ 73 (citing Ex. 1001, Fig. 2 [element 850]). However, claim 1 of the '436 Patent does not recite that the food article feed apparatus has motors, nor does Dr. Hooper show that the grippers as part of the feed apparatus are not "disposed over" the loading apparatus in claim 1. Consequently, Dr. Hooper's statements are not supported by underlying facts or data, and they are entitled to little or no weight. *See* 37 C.F.R. § 42.65.

Dr. Hooper testifies that Figure 2 of the '436 Patent shows servomotors and shafts of the feed apparatus that are not vertically above the loading apparatus. Ex. 1051 ¶ 73. The '436 Patent does not describe that it is the servomotors and shafts, however, that need to be aligned with the feed

paths. Instead, the feed apparatus's conveyor belts 802, 804, 806 and grippers 894 which engage with the ends of the food articles and drive them along their feed paths to the slicer, must be "disposed over" the load apparatus's lift tray assembly 220 such that they are vertically and laterally aligned. As so aligned, when pivoted to its elevated position, the lift tray assembly's lanes which guide food articles are aligned with the feed paths traveled by the grippers by their respective endless conveyor belts as they drive the food articles to the slicer. Hence, Dr. Hooper's testimony that the servomotors and shafts of the feed apparatus are not vertically above the loading apparatus is unpersuasive.

Dictionaries can be useful in claim construction. *See Phillips*, 415 F.3d at 1318. One dictionary defines "over" as "[i]f one thing is **over** another thing or is moving **over** it, the first thing is directly above the second, either resting on it, or with a space between them." Collins Dictionary, https://www.collinsdictionary.com/us/dictionary/ english/over (last viewed 1-18-22) (emphasis original). Exhibit 3003. This definition is closer to expressing the arrangement of the apparatuses described in the '436 Patent compared to the definition used by the Examiner. Ex. 1002, 208–209. The feed apparatus 120 is directly above the loading apparatus 108, with a space between them. Hence, our construction is consistent with this dictionary definition, which we find more representative of the plain and ordinary meaning appropriate to the arrangement described in the '436 Patent than is the definition provided by the Examiner considering the claims under the broadest reasonable interpretation standard.

In construing various terms in the '436 Patent, the District Court substituted "positioned over" for "disposed over" in its claim construction order "given its usage throughout the Patents-at-Issue and to provide clarity

for the jury." Ex. 1063, 13. Thus, the District Court's interpretation did not stem from any dispute between the parties, but instead was for the purpose of ensuring that a jury would understand the claim language. In contrast, in this proceeding, the parties dispute the meaning of "disposed over." We find it necessary to further refine the District Court's construction to resolve the controversy presented in this proceeding. *See Nidec Motor*, *supra*. We consider our construction to be entirely consistent with the District Court's because "positioned over" does not mean merely "above" as Petitioner contends, but connotes that one thing is directly over another thing and they are thus aligned with one another.

Hence, in light of the foregoing, we find that the proper construction of "disposed over" means that the food article feed apparatus and its conveyor belts and grippers are "positioned above and in vertical and lateral alignment with" the food article loading apparatus and its lift tray assembly.

For the avoidance of doubt, we reproduce Dr. Howard's annotated Figure 1B and schematic below with additional red arrows and red circle that we include to show vertical alignment and lateral alignment of the food article feed apparatus 120 and the food article loading apparatus 108.

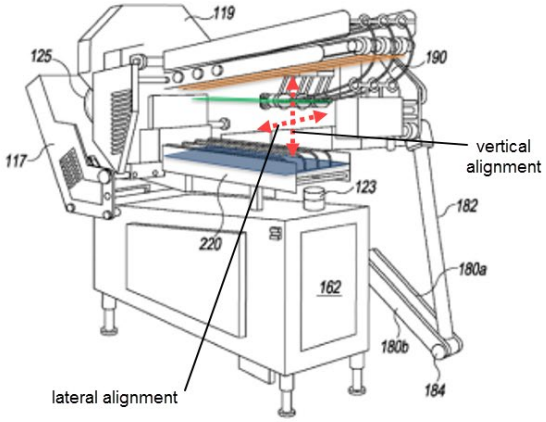
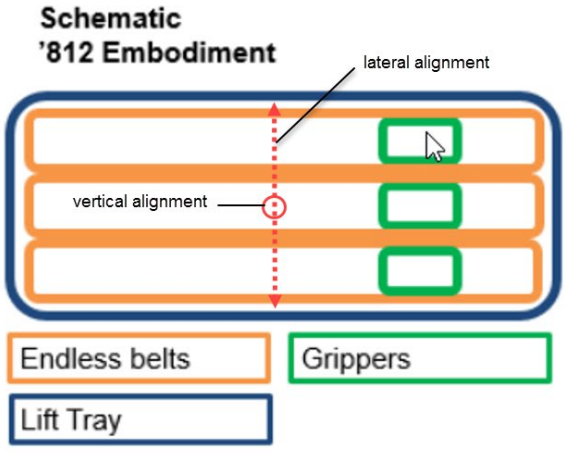


Fig. 1B

EX1001, FIG. 1B (ANNOTATED)



DEMONSTRATIVE SCHEMATIC

Dr. Howard's annotated Figure 1B and schematic with additional annotations we add to show vertical alignment and lateral alignment of the endless belts 802, 804, 806 (orange) and grippers 894 (green) of the food article feed apparatus 120 with the lift tray assembly 220 (blue) of the food article loading apparatus.

In Dr. Howard's annotated Figure 1B and schematic, shown above, we indicate in red arrows and red circle what is meant by vertical alignment and lateral alignment of the endless belts 802, 804, 806 and grippers 894 of food article feed apparatus 220 and the lift tray assembly 220 which defines lanes to guide the food articles. The red circle in the demonstrative indicates the vertical alignment arrow extends in the direction into the page with one end point touching the endless belts and the other end point touching the lift tray's surface. Such alignments are required for the lift tray assembly to be able to pivot from the staging position to the elevated position where the lanes defined by the lift tray assembly, and therefore the food articles in them, are aligned with the feed paths so that the grippers, driven by the endless conveyor belts, can engage with and drive the food articles along their feed paths toward the slicer.

IV. CITED PRIOR ART REFERENCES

A. 2006 904 Operating Manual

The 2006 904 Operating Manual describes operations of a food slicer, Petitioner's CCS 904 food slicer. Ex. 1005, 3–9. Figure 6 is reproduced below:

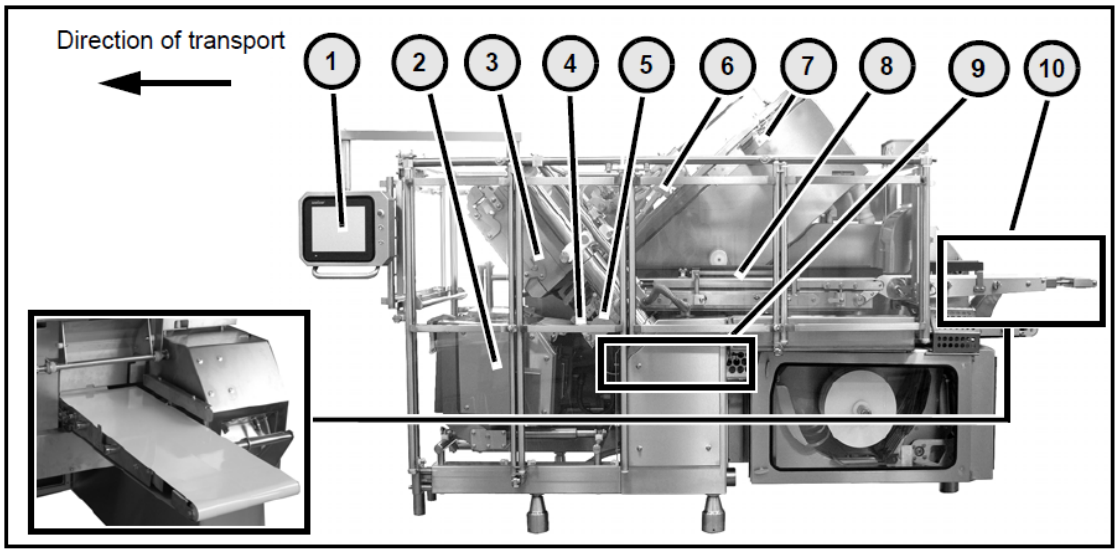


Fig. 6 Machine overview (for product lengths up to 1200 mm)

Figure 6 illustrates a slicing machine for slicing products up to 1200 mm. *Id.* at 15.

In the slicer illustrated in Figure 6, element 3 refers to a blade head housing, which contains a blade head drive, a blade head, and an involute blade. *Id.* at 15–16. Element 4 refers to a shear bar and product-section guide where the products are sliced. *Id.* Element 5 is a product bed conveyor that supports the guidance and transport of the product up to the shear bar, and serves as a product limit stop when the slicer is loaded and as a last piece ejection flap when the product's end pieces are ejected from the product holder. *Id.* Element 6 is an upper product guide for pressing on the products from above to facilitate even transport into the slicing area. *Id.* Element 7 refers to product holders for gripping the products, feeding them into the outlet and preventing them from falling out during slicing. *Id.* Element 8 is a product conveyor for feeding the products into the slicing area. *Id.* Element 9 is an end piece removal conveyor for moving end pieces of the products out of the slicing area. *Id.* Finally, element 10 is a timing belt used

by the operator or by a module connected upstream to feed products to the slicer. *Id.*

Figure 7 is reproduced below:

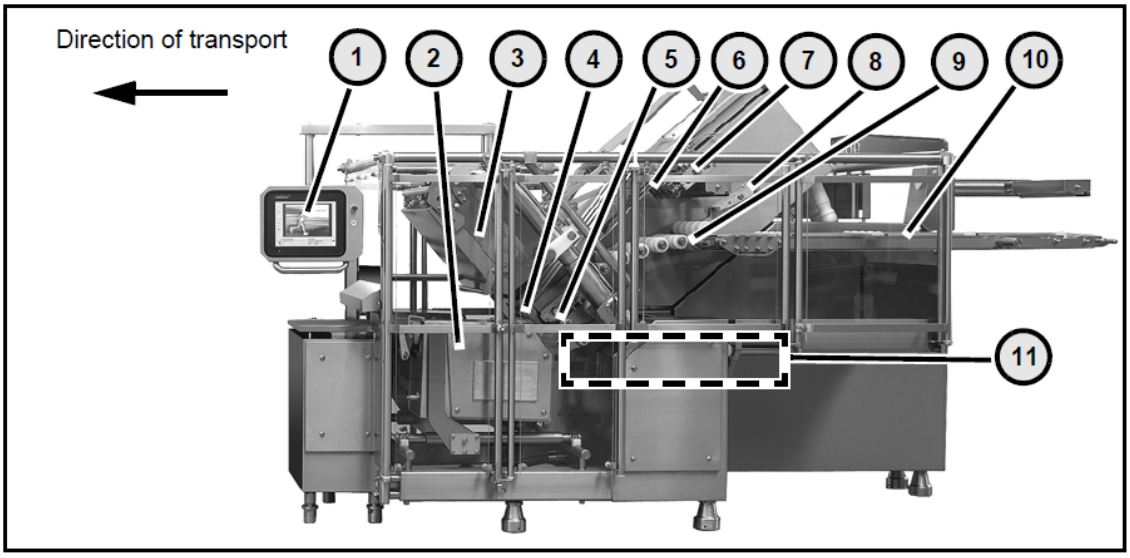


Fig. 7 Machine overview (for product lengths exceeding 1200 mm)

Figure 7 illustrates a slicing machine for slicing products exceeding 1200 mm in length. *Id.* at 17.

The slicer illustrated in Figure 7 includes elements 1–7, which are similar to elements 1–7 of the slicer illustrated in Figure 6. In addition, the slicer of Figure 7 includes a blank holder (element 8) that presses the product on to the transport tracks and thus supports an even and safe guidance of the product. *Id.* at 17–18. Element 9 is an end piece ejection flap for guiding the product into the slicing area and enabling the end piece to be ejected. *Id.* Element 10 is a product conveyor for feeding products into the slicing area. *Id.* Element 11 is an optional end piece removal conveyor for moving out of the slicing area the first slices or the end pieces of the products. *Id.*

Figures 28 and 29 of the 2006 904 Operating Manual, reproduced below, illustrate a slicing process and a process of ejecting end pieces. *Id.* at 40.

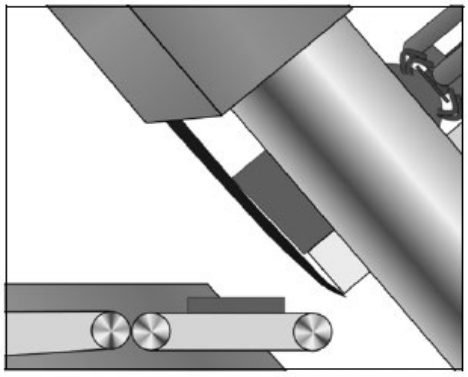


Fig. 28 Slicing process

Figure 28 illustrates a slicing process for products fed to the blade. *Id.*

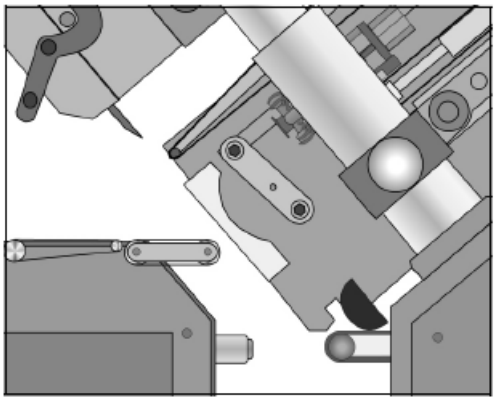


Fig. 29 Ejecting end pieces

Figure 29 illustrates ejection of end product pieces. *Id.*

The ejection process illustrated in Figure 29 (i) pulls back the end pieces of the products using the product holder, (ii) pivots the product bed conveyor into the ejection position, and (iii) uses the product holder to let the end pieces fall such that (iv) the end pieces fall on to the end piece removal conveyor and are removed. *Id.*

B. 2010 904 Operating Manual

The 2010 904 Operating Manual describes the operations of Petitioner's CCS 904-02 food slicer. Ex. 1009, 1, 3–8. According to Petitioner, the 2010 904 Operating Manual is "substantively identical" to the 2006 904 Operating Manual except that it describes "an additional, optional feature that enables each of the upper conveyors (i.e., the 'product guide') to be independently driven by separate drive motors." Pet. 9 (citing Ex. 1009, 166; Ex. 1003 ¶¶ 45–46). Because the drive motors are the focus of Petitioner's reliance on the 2010 904 Operating Manual, our summary below centers on that feature.

Figure 211 of the 2010 904 Operating Manual is reproduced below:

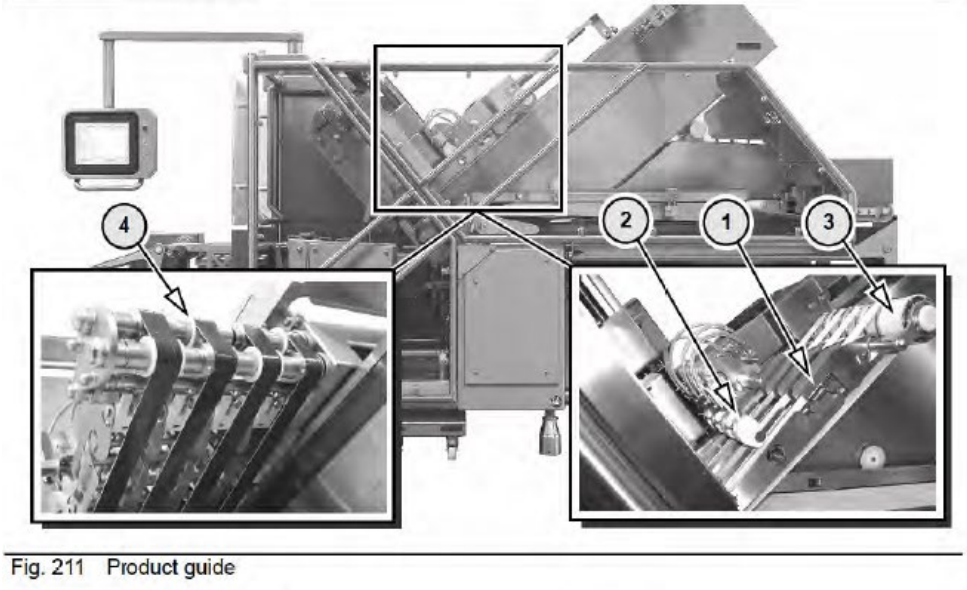


Fig. 211 Product guide

Figure 211 illustrates elements of the CCS 904-02 slicer's drive unit. Ex. 1009, 166.

Figure 211 shows support frames (element 1), a cylinder holder (element 2), and a standard drive unit (element 3) or an optional drive unit with separate drives (element 4). Ex. 1009, 166. With the standard drive unit, all tracks of

the product guide are driven at the same speed by the drive unit. *Id.* In the optionally available version of the slicer with separate drives, all tracks of the product guide can be individually driven with different speeds. *Id.*

C. Insufficiency of Showing that the 2006 904 Operating Manual and 2010 904 Operating Manual Qualify as Printed Publications

A petitioner may assert unpatentability of a claim of a challenged patent "only under a ground that could be raised under section 102 or 103 and only on the basis of prior art consisting of patents or *printed publications*." 35 U.S.C. § 311(b) (italics added). A threshold, disputed issue in this case is whether Petitioner has made an adequate showing that the 2006 904 Operating Manual and the 2010 904 Operating Manual qualify as prior art printed publications within the meaning of the statute. *See* Pet. 18–24; Resp. 4–23; Reply 1–9; Sur-Reply 1–9.

1. Legal Standards

In determining whether a reference qualifies as a printed publication, "[t]he key inquiry is whether or not a reference has been made 'publicly accessible.'" *M&K Holdings, Inc. v. Samsung Elecs. Co.*, 985 F.3d 1376, 1379 (Fed. Cir. 2021) (quoting *In re Klopfenstein*, 380 F.3d 1345, 1350 (Fed. Cir. 2004)); *In re Hall*, 781 F.2d 897, 898–99 (Fed. Cir. 1986). "A reference will be considered publicly accessible if it was 'disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence can locate it.'" *Medtronic, Inc. v. Barry*, 891 F.3d 1368, 1380 (Fed. Cir. 2018) (quoting *Kyocera Wireless Corp. v. Int' Trade Comm'n*, 545 F.3d 1340, 1350 (Fed. Cir. 2008)); *Acceleration Bay, LLC v. Activision Blizzard Inc.*, 908 F.3d 765, 772 (Fed. Cir. 2018) (citing *Jazz Pharm., Inc. v. Amneal Pharm., LLC*, 895 F.3d 1347, 1355–56 (Fed. Cir. 2018)).

At the institution stage, the operative question is whether a petitioner has established a reasonable likelihood that a reference is a printed publication. *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29, 21 (PTAB Dec. 20, 2019) (precedential). This differs from the standard in a final written decision, at which point "the petitioner bears the burden of establishing by a preponderance of the evidence that a particular document is a printed publication." *Nobel Biocare Servs. AG v. Instradent USA, Inc.*, 903 F.3d 1365, 1375 (Fed. Cir. 2018) (citing *Medtronic*, 891 F.3d at 1380).

2. Summary of Petitioner's Contentions

Petitioner asserts that the "[t]he 2006 904 [Operating Manual] is an operations manual for the Weber 904 food slicer" and that the 2010 904 Operating Manual "is a later version of the first 904 manual." Pet. 3, 9. Petitioner presents testimonial evidence to support its assertions that the Weber 904 food slicer was sold to the general public at least as early as November 15, 2007, and that the 2006 904 Operating Manual "was shipped with each 904 slicer sold between November 15, 2007, and May 2009." *Id.* at 19 (citing Ex. 1011 ¶¶ 11–12; Ex. 1010 ¶¶ 11–18). According to Petitioner, paper and electronic copies of the 2006 904 Operating Manual accompanied each of the forty-nine 904 slicers delivered to customers during that period, of which eleven were delivered within the United States. *Id.* at 23 (citing Ex. 1011 ¶ 16; Ex. 1010 ¶ 16).

Petitioner further asserts that the 2006 904 Operating Manual was available to interested members of the public upon request. *Id.* at 21–22 (citing Ex. 1011 ¶¶ 4, 12; Ex. 1010 ¶ 21). Petitioner contends that the advertising and magazine articles announcing the release of the 904 slicer made interested members of the public aware of the 904 slicer and,

therefore, the 2006 904 Operating Manual. *Id.* at 24 (citing Ex. 1011 ¶ 13). Petitioner further contends it "routinely allowed members of the public to inspect the 904 Manuals at trade shows" and provides testimonial evidence in support of its contention. Reply 8 (citing Ex. 1061 ¶¶ 3–15; Ex. 1060 ¶¶ 33–43).

Petitioner presents similar arguments and evidence to support the public accessibility of the 2010 904 Operating Manual. *See* Pet. 23–24. In particular, Petitioner argues that the 2010 904 Operating Manual accompanied each of the five 904 slicers that were sold between February 15, 2010, and May 2010, and that the 2010 904 Operating Manual was available to the public upon request at least as early as February 15, 2010. *Id.* (citing Ex. 1011 ¶¶ 19–26; Ex. 1010 ¶¶ 19–27; Ex. 1016 ¶ 17).

Petitioner argues that the facts of this case are similar to *In re Enhanced Security Research, LLC*, 739 F.3d 1347 (Fed. Cir. 2014) ("*Enhanced Security*") holding that a manual for a software product was a "printed publication" because of a date inscription, a declaration by the CEO of the software company that members of the public showing an interest in buying or licensing the software product could have obtained the manual on request, advertisements of the product, and that the product was sold and installed with a dozen customers. *Id.* at 1354–55; Pet. 22; Reply 1–2.

3. Summary of Patent Owner's Contentions

Patent Owner argues that Petitioner's showing is insufficient because the 904 Operating Manuals were subject to confidentiality agreements. Resp. 10–14 (citing Ex. 1005, 2; Ex. 1009, 2). Particularly, Patent Owner contends that inscriptions in the 2006 and 2010 904 Operating Manuals required that they could not be "transferred in any way." Patent Owner further argues that Petitioner's General Sales and Delivery Terms and

Conditions ("Terms and Conditions") prohibited distribution of the 2006 and 2010 904 Operating Manuals without consent. Resp. 12–13 (citing Ex. 2001, Section X.1).

Furthermore, Patent Owner contends that there was an expectation of confidentiality of product manuals in the industry. Resp. 14–18 (citing Ex. 2002 ¶¶ 3–8). Patent Owner contends that its assertion is supported by its own sales contracts as well as those of others in the industry. *Id.* at 15–17 (citing Ex. 2003 § 7; Ex. 2004 § 1.2; Exs. 2005–2013). Patent Owner argues that the evidence shows that customers treated the 2006 and 2010 904 Operating Manuals as confidential, in one instance storing them in a locked and caged room inside a larger facility requiring separate key-card access. *Id.* at 17 (citing Ex. 2018, 36:2–37:4).

Patent Owner asserts the 2006 and 2010 904 Operating Manuals were not "otherwise made available" to skilled artisans. Resp. 18–23. Specifically, Patent Owner contends that Petitioner "has not shown it had a policy to provide the 2006 and 2010 904 Operating Manuals upon request to '"interested persons."'" *Id.* at 19–20 (citing Ex. 1010 ¶ 21). Patent Owner also contends that "interested persons" would have found the price of a 904 slicer to be prohibitively high and therefore practically inaccessible. *Id.* at 21–23. Patent Owner further asserts that Petitioner did not show that any of the customers that received access to the 2006 and 2010 904 Operating Manuals were "persons interested and ordinarily skilled in the subject matter or art." *Id.* at 22 (citing *Acceleration Bay, LLC v. Activision Blizzard Inc.*, 908 F.3d 765, 772 (Fed. Cir. 2018)).

Patent Owner contends the facts of this case are more similar to *Cordis Corp. v. Boston Sci. Corp.*, 561 F.3d 1319, 1333 (Fed. Cir. 2009) than they are to *Enhanced Security*, the case on which Petitioner relies.

Resp. 7–8. *Cordis* held that limited distribution can make a work publicly accessible, but "a binding agreement of confidentiality may defeat a finding of public accessibility," and that professional and behavioral norms may establish a reasonable expectation that information will not be copied or further distributed. *Acceleration Bay,* 561 F.3d at 1333.

4. Analysis

"[W]here a distribution is made to a limited number of entities, a binding agreement of confidentiality may defeat a finding of public accessibility." *Cordis*, 561 F.3d at 1333. We first consider whether the 2006 and 2010 904 Operating Manuals were distributed to a limited number of entities. The Petition evidence shows that distribution of the 2006 904 Operating Manual was made to seven unique customers in the United States (Ex. 1016 ¶ 19), and that distribution of the 2010 904 Operating Manual was made to three unique customers worldwide (Ex. 1011, Appendix G) from October 2007 to May 2010. Pet. 19–21; Resp. 9; Paper 8, 13–14, 16–17 (Preliminary Response); Ex. 1011 ¶¶ 16, 19; Ex. 1016 ¶ 19. Accordingly, the 2006 and 2010 904 Operating Manuals were distributed to ten unique entities.

Petitioner indicates it sold 49 slicers worldwide, which would have been accompanied by paper and electronic copes of the 2006 904 Operating Manual (Pet. 20 (citing Ex. 1011 ¶ 15; Ex. 1010 ¶ 15) and that it sold an additional five slicers, which would have been accompanied by copies of the 2010 904 Operating Manual (Pet. 23 (citing Ex. 1011 ¶¶ 19–26; Ex. 1010 ¶¶ 19–27)). The Petition appears to focus more on the *numbers* of 2006 and 2010 904 Operating Manuals distributed whereas *Cordis* is concerned with whether a limited number of *entities* received product manuals. 561 F.3d at 1333.

At the hearing, Petitioner contended that the 2006 904 Operating Manual was disseminated to 36 unique entities before the critical date. Tr. 6. Petitioner does not show, however, where this number is supported in the record. Rather, as noted above, the record shows that the 2006 and 2010 904 Operating Manuals were distributed to ten unique entities.

From the evidence presented in the Petition, under *Cordis*, Petitioner has not shown that the distribution of the 2006 and 2010 904 Operating Manuals was to more than a "limited number of entities." Petitioner relies on *Enhanced Security*, but that case involved distribution to a dozen customers, which is slightly more than the Petition evidence in this case or in *Cordis*. Petitioner does not show that distribution of the 2006 and 2010 904 Operating Manuals to ten unique customers exceeds a "limited number of entities" under the circumstances presented here. Consequently, following *Cordis*, we proceed to consider the matter of confidentiality.

Petitioner relies on its expert and employees in asserting that the 2006 and 2010 904 Operating Manuals were publicly available and not confidential. Pet. 18–24; Ex. 1003 (Richard Hooper) ¶¶ 53–68; Ex. 1010 (Jörn Schreiber) ¶¶ 2–27; Ex. 1011 (Carsten Reisz) ¶¶ 2–26; Ex. 1016 (Frank Rypel) ¶¶ 2–30; Ex. 1060 (Timo Rotter) ¶¶ 2–46; Ex. 1061 (Theodor Horst) ¶¶ 2–15. These declarants testify about shipping copies of the 2006 and 2010 904 Operating Manuals along with slicer machines to customers. Ex. 1010 ¶ 4; Ex. 1011 ¶ 4; Ex. 1016 ¶ 7; Ex. 1060 ¶¶ 7–9. They also testify that the 2006 and 2010 904 Operating Manuals were not confidential and were freely available upon request. Ex. 1010 ¶ 21; Ex. 1011 ¶ 20; Ex. 1060 ¶ 4.

Patent Owner points to inscriptions in the 2006 and 2010 904 Operating Manuals and contends they conflict with the declarants' testimony

concerning the confidential status of the 2006 and 2010 904 Operating Manuals. Resp. 10–14. The 2006 904 Operating Manuals bear the following inscription:

> © WEBER Group
> Without the written authorisation of the WEBER Group, neither the operating manual nor any portion thereof may be reproduced or transferred in any way. The user may copy the operating manual for internal use or print it from CD.

Ex. 1005, 2. The 2010 904 Operating Manuals bear a similar inscription. Ex. 1009, 2.

Effectively, the inscriptions require confidentiality because no portion of the 2006 and 2010 904 Operating Manuals may be "transferred in any way" without "the written authorisation" of Petitioner. Further, the user's copying of the 2006 and 2010 904 Operating Manuals is limited "for internal use" meaning it cannot be disclosed outside of the receiving entity. By their plain language, the inscriptions require the recipient to keep the 2006 and 2010 904 Operating Manuals in confidence.

We also agree with Patent Owner that confidentiality is required by Petitioner's Terms and Conditions covering sales of 904 slicers. Resp. 12–13 (citing Ex. 2001). The Terms and Conditions read as follows:

> X. Intellectual Property Rights
> 1. Cost estimates, drafts, drawings and other documents remain the property of Seller. The comprehensive copyright with all associated rights to all documents and information transferred during the contractual relationship belongs exclusively to Seller, even if these objects were created based on specifications or assistance from Buyer. Such objects may only be made accessible to third parties with the consent of Seller. Drawings and other documents associated with the offers are to be returned immediately upon request or if the order is not granted.

Ex. 2001 § X.1. Thus, according to the Terms and Conditions, Petitioner (as "Seller") maintains proprietary rights in all documents (including the 2006 and 2010 904 Operating Manuals) transferred to a customer (i.e., "Buyer"), and the customer may only make the documents accessible to third parties with Petitioner's consent. Furthermore, immediate return of documents is required if an order is not granted. In other words, the Terms and Conditions restrict transfer of documents outside of the recipient and in essence constitute a confidentiality agreement.

Petitioner's declarant testifies that the documents referenced in the Terms and Conditions refer to pre-sale documents only, and that Petitioner's practice was to mark such documents "confidential" to indicate they were to be subject to confidentiality restrictions of the Terms and Conditions. Ex. 1060 ¶ 16. The Terms and Conditions, however, do not mention anything about confidential and non-confidential classes of documents or marking documents "confidential." Instead, they cover "all documents and information transferred during the contractual relationship." Ex. 2001 § X.1. Petitioner has not explained adequately how the alleged different classes of documents or its practice of marking documents "confidential" might be consistent with its Terms and Conditions.

We further observe that Petitioner's evidence that the 2006 and 2010 904 Operating Manuals were not confidential stems primarily from the testimony of its employees, each of whom have an interest in the outcome of this case because of their work relationship with Petitioner. Ex. 1010; Ex. 1011; Ex. 1016; Ex. 1060; Ex. 1061.

Furthermore, when a declarant's testimony conflicts with documentary evidence, such as the confidentiality provisions contained in the 2006 and 2010 904 Operating Manual inscriptions and the Terms and

Conditions (Ex. 1005, 2; Ex. 1009, 2; Ex. 2001, Section X.1), we lean toward drawing our conclusions from the documentary evidence. *U.S. v. U.S. Gypsum Co.*, 333 U.S. 364, 395–396 (1948) (rejecting testimony in conflict with documentary evidence). This is because the documentary evidence was prepared contemporaneously in the normal course of business, whereas the declarants' testimony has been given retrospectively with litigation in mind.

Petitioner introduces the testimony of a customer's employee, Mr. David Frett, who states that he received 2006 and 2010 904 Operating Manuals along with shipments of 904 slicers from Petitioner at the customer's plant facilities. Ex. 1017 ¶¶ 3–10. He testifies that the 2006 and 2010 904 Operating Manuals were kept in the maintenance shop library of customer's plant facility. *Id.* ¶ 4. At his deposition, he indicated that entry into the plant facility required an access badge. Ex. 2018, 30:20–32:11. He referred to the library within the facility as a "maintenance crib"—a wire cage and locked door accessible only by certain employees. *Id.* at 33:17–41:8. He testifies that he was not aware of anyone that was not an employee of the customer requesting access to the library, and that the library was not available to the public. *Id.* at 41:5–43:12.

Mr. Frett's testimony establishes that the particular customer he worked for did not treat the 2006 and 2010 904 Operating Manuals as publicly accessible, but maintained them under at least two layers of security requiring badge access and a key to unlock the door of a caged room ("crib") housing the 2006 and 2010 904 Operating Manuals. Mr. Frett further establishes that only certain employees were permitted to access the 2006 and 2010 904 Operating Manuals. Mr. Frett is the only person on record to testify on behalf of a purchaser of a 904 slicer.

Petitioner's employees testify that 904 slicers were shipped to trade shows along with copies of the documentation, including the 2006 904 Operating Manual. Reply 8; Ex. 1060 ¶¶ 35–38; Ex. 1061 ¶¶ 5–6. Petitioner's employees testify that "customers and other interested persons" (including potential customers, suppliers, service partners, installers, secondary market purchasers, and academics or students conducting research) attend trade fairs, and that they are permitted to view documentation, including the 2006 904 Operating Manual, upon request. Ex. 1060 ¶ 39; Ex. 1061 ¶¶ 5, 7. Petitioner's employees testify that they would show the 2006 904 Operating Manual two to five times per day at every trade fair that Petitioner attended. Ex. 1060 ¶ 39; Ex. 1061 ¶ 7. Mr. Horst recalls one instance in which he showed the 2006 904 Operating Manual to a potential customer at a tradeshow who later bought a 904 slicer. Ex. 1061 ¶ 10. Petitioner's employees also testify that Petitioner would permit viewing of the 2006 and 2010 904 Operating Manuals upon request of a visiting customer or other interested person at Petitioner's factory demonstration rooms. Ex. 1060 ¶¶ 42–44; Ex. 1061 ¶¶ 13–15.

The Petition contains no mention of showing the 2006 and 2010 904 Operating Manuals at trade shows or demonstration rooms, and the first time this evidence was mentioned was in the Reply. Reply 4, 8. We note that Exhibits 1060 and 1061 exceed the proper scope of a Reply as required under 37 C.F.R. § 42.23(b), and we, therefore, do not have to consider this evidence.

Nevertheless, even if we were to consider the evidence, we find it insufficient to establish that the 2006 and 2010 904 Operating Manuals were accessible to the interested public. Specifically, the evidence concerning trade shows and demonstration rooms contradicts other evidence on this

record. For example, Patent Owner contends that only customers, and not the general public, attended Petitioner's events at trade shows and demonstration rooms. Sur-Reply 9 (citing Ex. 2029, 54:16–55:11 (cross-examination of Theodor Horst)). Patent Owner asserts that Petitioner's showrooms were open to customers by invitation only. *Id.* (citing Ex. 2029, 79:19–80:2). Patent Owner further contends Petitioner's evidence is the "say-so" of its witnesses, and that Petitioner has not shown that the manuals shown at trade fairs had the same disclosure as the 2006 and 2010 904 Operating Manuals on which Petitioner relies in this case. *Id.* (citing Ex. 2029, 33:3–8, 27:14–21). We agree with Patent Owner that these considerations undermine Petitioner's proffered evidence.

We further observe that Petitioner does not indicate which parts, if any, of the 2006 and 2010 904 Operating Manuals were shown to "customers and other interested persons" at trade fairs and demonstration rooms. Particularly, Petitioner does not indicate that customers were shown the features of the 904 slicers that are in issue in this case. There is no evidence that any 2006 or 2010 904 Operating Manual was ever freely given out to any attendee or visitor. Moreover, the confidentiality restrictions in the 2006 and 2010 904 Operating Manuals contradict Petitioner's assertions that the Manuals were freely available for inspection by attendees of the trade shows or demonstration rooms. Consequently, even if we could consider Petitioner's new evidence, it would be insufficient to establish that the 2006 and 2010 904 Operating Manuals used in Petitioner's challenges were publicly available.

Petitioner's declarant, Mr. Horst, indicates that a former intern with Petitioner who later became a university student requested to use the 2006 904 Operating Manual for supporting references in a thesis, and that the

student was able to get a release from Petitioner to use excerpts from the 2006 904 Operating Manual in his thesis. Ex. 2029, 72–75. Petitioner's declarant indicates that Petitioner had a standing policy "that documentation, regardless or type, there has to be a release before it leaves the company, before it's given out." Ex. 2029, 74. What excerpts those were; their relevance, if any, to the features Petitioner relies upon here; and what restrictions of confidentiality, if any, applied to the intern-student because of his former employment with Petitioner, are not explained in the record. Consequently, this evidence is of little value in determining public accessibility of the 2006 and 2010 904 Operating Manuals.

Enhanced Security held that advertising of a product had some bearing on determining that the corresponding manual was publicly available. *Enhanced Security*, 739 F.3d at 1355. Petitioner states that there was publicity, such as advertising and magazine articles, surrounding the release of the 904 slicer. Pet. 22 (citing Ex. 1011 ¶ 13). The advertisement cited contains no mention of an operating manual or its availability. Ex. 1011, 893–898 (Appendix E).

In any case, a major difference that distinguishes the facts presented here from *Enhanced Security* is the confidentiality provisions contained in the 2006 and 2010 904 Operating Manuals and the Terms of Conditions. Ex. 1005, 2; Ex. 1009, 2; Ex. 2001 § X.1. No such confidentiality restrictions were present in *Enhanced Security*.

Cordis states that "'[w]here professional and behavioral norms entitle a party to a reasonable expectation'" that information will not be copied or further distributed, "'we are more reluctant to find something a "printed publication."'" *Cordis*, 561 F.3d at 1333–34 (citing *Klopfenstein*, 380 F.3d at 1351). Patent Owner contends that evidence shows there was an

expectation of confidentiality for product manuals in the industry. Resp. 14–18.

Patent Owner's declarant, Mr. Scott Scriven, works for Patent Owner as its Executive Vice President. Ex. 2002 ¶ 1. He was formerly employed by Petitioner at its Kansas City, Missouri location from 1999 to 2013, and was its President from 2006 to 2010. *Id.* ¶ 2. Mr. Scriven testifies that at the time the 2006 and 2010 904 Operating Manuals were written and distributed, there was an expectation of confidentiality in the industry. Resp. 14 (citing Ex. 2002 ¶¶ 5–8). He testifies that Petitioner would only provide product manuals to customers. *Id.* at 14–15. He further testifies that he is aware of no instance in which a potential customer, supplier, service partner, installer, secondary market purchaser, or academic requested and received a copy of the 2006 or 2010 904 Operating Manual. *Id.* (citing Ex. 2002 ¶ 3). Patent Owner further indicates that the sales contracts of competitors in the industry had terms and conditions similar to Petitioner's, requiring confidentiality of technical product information, including product manuals. *Id.* at 15–18 (citing Ex. 2003 § 7; Ex. 2004 § 1.2; Exs. 2005–2013).

The security measures that Petitioner's customer used to protect confidentiality of the product manuals, such as locking them inside of a caged room in a facility that could only be accessed with a security badge, also tends to show that the industry recognized the product manuals to be confidential information. *Id.* at 17 (citing Ex. 2014, 76:4–77:6; Ex. 2018, 36:2–37:4).

Further, when asked if he had ever seen a competitor's operating manual for one of its products, Petitioner's declarant, Mr. Horst, testified that he had not seen one in 31 years of working for Petitioner. Ex. 2029, 15,

88–89. The evidence supports Patent Owner's contention that there was an industry norm to require confidentiality of product manuals for equipment sold to customers.

Kyocera established that the applicable audience for determining whether a document is a printed publication is "persons interested and ordinary skilled in the subject matter or art." *Kyocera*, 545 F.3d at 1350. Petitioner's declarants contend that this category of individuals includes potential customers, suppliers, service partners, installers, secondary market purchasers, and academics and students conducting research. Ex. 1060 ¶ 39; Ex. 1061 ¶ 7. Petitioner has overstated individuals that constitute "persons interested and ordinary skilled." At best, Petitioner's evidence relates to customers, an installer, and a student. There is no evidence that the remaining categories constitute "persons interested and ordinary skilled" for purposes of gauging Petitioner's evidence of public accessibility of the 2006 and 2010 904 Operating Manuals, which is Petitioner's burden to carry.

For the forgoing reasons, we conclude that the Petition does not show by a preponderance of the evidence that the 2006 and 2010 904 Operating Manuals were printed publications. The 2006 and 2010 904 Operating Manuals' inscriptions provided for confidentiality of the information contained in them, and Petitioner's Terms and Conditions reinforce that the Manuals were confidential, and to be held in confidence by customers who bought 904 slicer machines from Petitioner. As all grounds depend critically on the 2006 and 2010 904 Operating Manuals, and Petitioner has not shown the remaining prior art discloses all of the features of the claims of the '436 Patent, the Petition does not show unpatentability by a preponderance of the evidence of any claim. Nonetheless, for the sake of completeness, we will address Petitioner's obviousness challenges in a subsequent section.

D. Lindee

Lindee describes a high speed slicing machine for two or more food loaves. Ex. 1006, codes (54), (57). Lindee's high speed slicing machine supports first and second food loaves for movement along parallel loaf paths into a slicing station where both loaves are sliced by a cyclically driven knife blade, the slices being stacked or shingled in groups on a receiving conveyor located below the slicing station. *Id.* Figure 3 is reproduced below:

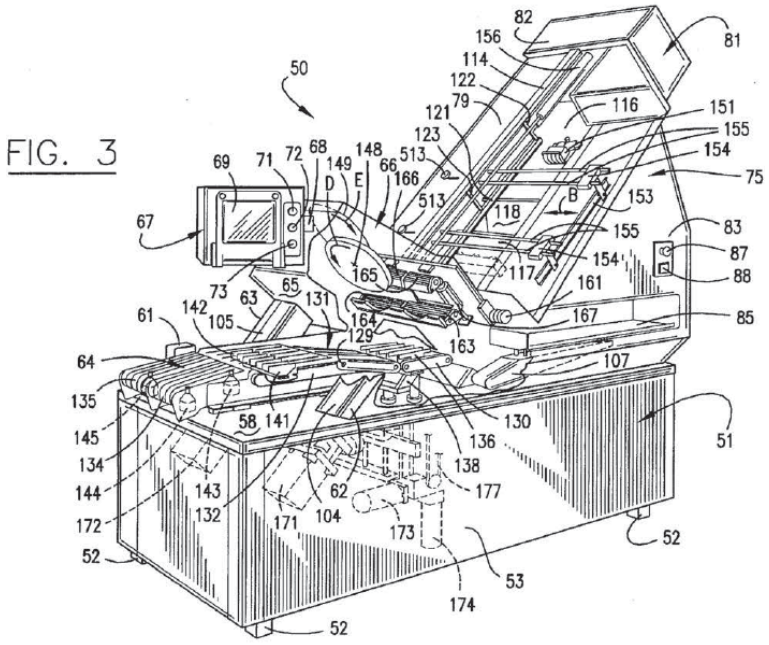


Figure 3 illustrates Lindee's slicing machine. *Id.* at 3:20–33.

Slicing machine 50 in Lindee's Figure 3 includes, *inter alia*: a slicing station 66; a knife blade 149; a loaf feed mechanism 75 which includes a manual feed from a right-hand (far) side of the machine and an automated feed from the left-hand (near) side of the machine; and a near-side clamp or gripper mechanism 151, with a similar gripper mechanism at the far side of slicing machine. *Id.* at 4:4–8:5. Lindee's slicing machine combines manual

and automated mechanisms to load food loaves onto the food paths. *Id.*, code (57). The machine's grippers, one on each loaf path, grip the end of a loaf remote from the slicing station, and for each gripper, a loaf feed drive impels the gripper toward the slicing station and then moves the gripper back to a home position, releasing an unsliced loaf butt on the way through a door opening in the loaf support. *Id.*

V. ANALYSIS OF GROUNDS

A. Legal Standards for Obviousness

In *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966), the Supreme Court set out a framework for assessing obviousness under § 103 that requires consideration of four factors: (1) the "level of ordinary skill in the pertinent art," (2) the "scope and content of the prior art," (3) the "differences between the prior art and the claims at issue," and (4) "secondary considerations" of nonobviousness such as "commercial success, long felt but unsolved needs, failure of others, etc." *Id.* at 17–18; *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 407 (2007). We discussed the first *Graham* factor in Section II and the second *Graham* factor in Section IV. The record includes no evidence or arguments relating to the fourth *Graham* factor. We address the third *Graham* factor in the obviousness analysis and conclusion below.

B. Ground 1: Obviousness Based on the 2006 904 Operating Manual and Lindee

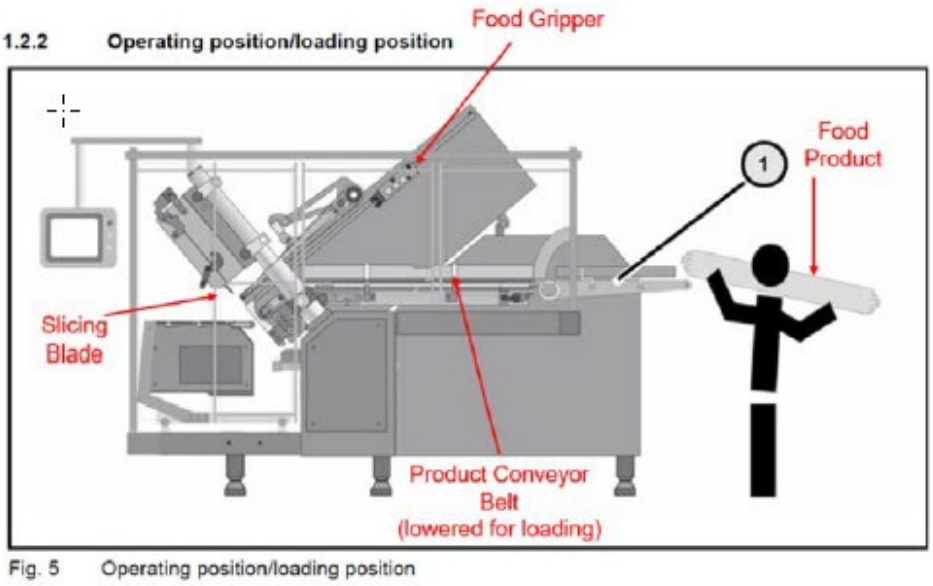
1. Claim 1

In this discussion, we focus on the limitations of claim 1 that are dispositive of this case.

a) "disposed over"

Petitioner contends that the 2006 904 Operating Manual and Lindee each disclose limitation [1.1] of claim 1 reciting "a food article loading apparatus with a lift tray assembly for moving food articles from a staging position to an elevated position at a beginning of a food article feed path." Pet. 30–33.

As supporting evidence, Petitioner relies on Figure 5 of the 2006 904 Operating Manual, shown below. *Id.* at 31.



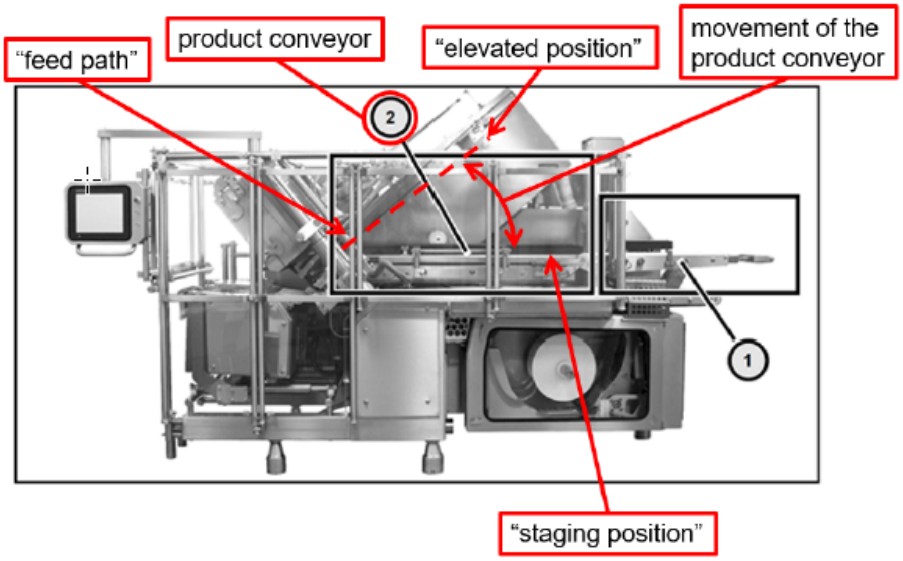
EX1005, FIG. 5 (annotated).

Figure 5 of the 2006 904 Operating Manual is illustrated above as annotated by Petitioner to show the slicer machine with product conveyor lowered for loading with food product. Pet. 31; Ex. 1005, 14, Fig. 5.

In Figure 5 above, Petitioner's annotations in red show food product being loaded onto a timing belt. The timing belt (element 1 in the figure) feeds food product to a product conveyor belt that has been lowered for loading, as

shown in red annotation. Also indicated in red annotation are the food gripper and slicing blade.

Petitioner further presents an annotated version of Figure 14 of the 2006 904 Operating Manual shown below. *Id.* at 32.



EX1005, FIG. 14 (annotated).

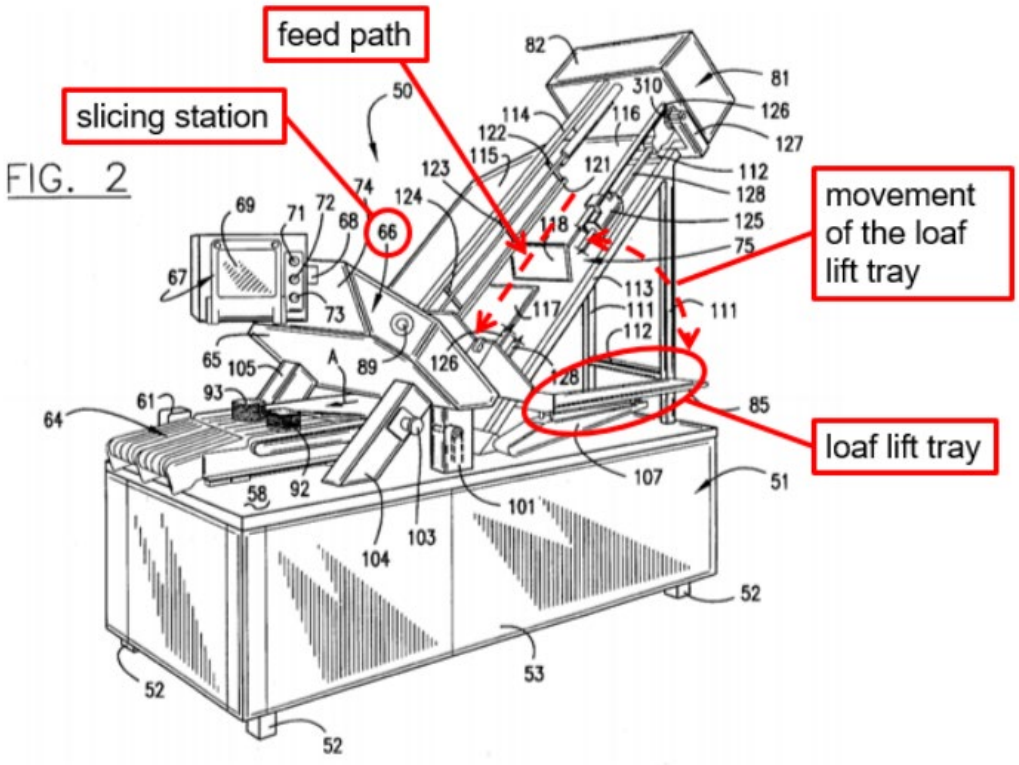
Petitioner's annotated Figure 14 above shows the product conveyor and how it moves from staging position to elevated position to feed the food product along a feed path to the slicer. Pet. 32 (citing Ex. 1005, 25, Fig. 14).

Petitioner contends that in the 2006 904 Operating Manual, the combination of the product conveyor belt, the timing belt, and related actuators and supporting structure disclose the claimed "food article loading apparatus" because these elements work together to load food articles into the feed path for slicing. Pet. 32 (citing Ex. 1003 ¶ 101; Ex. 1005, 10, Fig. 1).

Petitioner also contends that Lindee discloses a lift tray and corresponding actuators and support structure that constitute the claimed

"food article loading apparatus" because they move food articles from a staging position to an elevated position" as claimed. Pet. 33 (citing Ex. 1006, 4:61–5:5, 5:63–6:2, Figs. 1–2; Ex. 1003 ¶¶ 103–105).

Lindee's Figure 2 is reproduced below as annotated by Petitioner's expert, Dr. Richard Hooper. Pet. 33 (citing Ex. 1003 ¶ 103).



EX1006, FIG. 2 (annotated).

Lindee's Figure 2, annotated by Dr. Hooper, to show the loaf lift tray 85 moving from the staging position to the elevated position at the beginning of the food article feed path to the slicing station 66. Ex. 1003 ¶ 103.

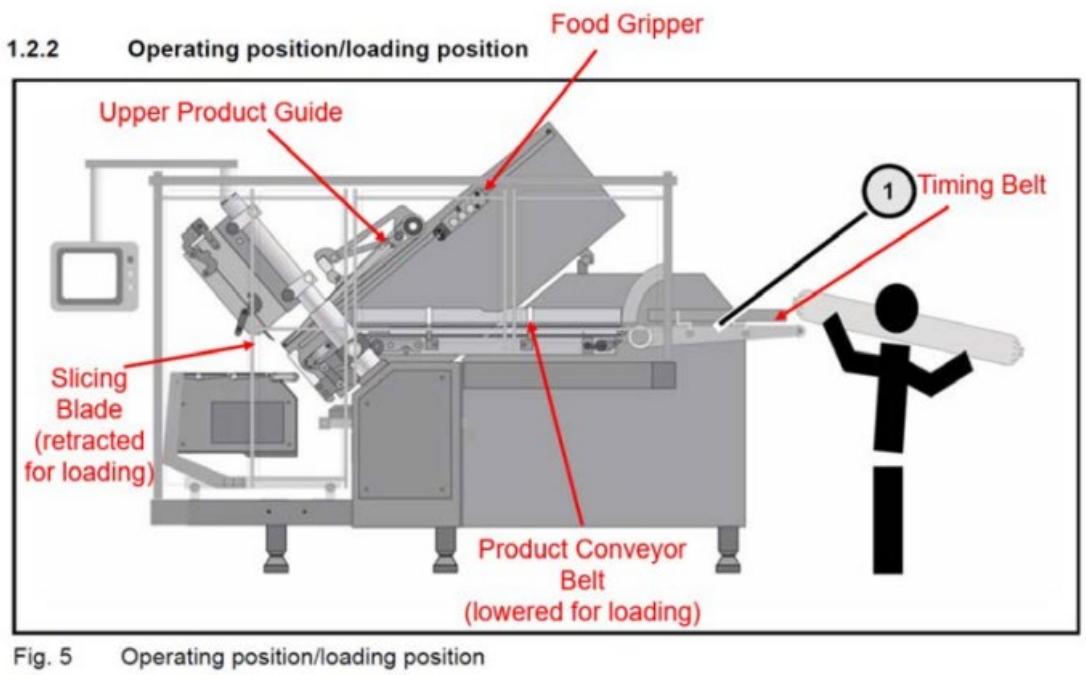
In Lindee's Figure 2, above, the lift tray 85 is initially in the staging position to receive loaves of food articles. Pet. 33 (Ex. 1003 ¶ 103). The lift tray 85 is then raised with mechanism 107 that pivots the tray to the elevated position where the loaves are moved laterally by the loaf feed mechanism 75

and positioned at the beginning of the feed path to the slicing station 66. *Id.* Petitioner contends that the lift tray 85 and its corresponding actuators and support structure (including mechanism 107) constitute the claimed "food article loading apparatus" because they move food articles from a staging position to an elevated position, as claimed. *Id.* (citing Ex. ¶¶ 103–105).

Petitioner contends that the 2006 904 Operating Manual and Lindee together disclose limitation [1.2] of claim 1 of "a food article feed apparatus *disposed over* the food article loading apparatus having an upper conveyor assembly with a driven endless conveyor belt used in cooperation with a food article gripper for moving the food articles along the food article feed path." Pet. 33–38 (emphasis added).

Petitioner contends that the 2006 904 Operating Manual discloses the part of limitation [1.2] of claim 1 reciting "a food article feed apparatus disposed over the food article loading apparatus . . . with a food article gripper." Pet. 33. Petitioner contends that the 2006 904 Operating Manual discloses that a "product holder grips the loaded product and guides it to the slicing area." Pet. 34 (citing Ex. 1005, 23, 40, Fig. 12). According to Petitioner, the product holder works together with the "upper product guide" to guide food to the slicing blade. Pet. 34 (citing Ex. 1005, 22, 40; Ex. 1003 ¶ 107). Petitioner contends the upper product guide is a conveyor belt that presses down on the food article from above and helps transport the food article toward the slicer blade. *Id.* at 34–35 (Ex. 1005, 15, 40; Ex. 1003 ¶ 107).

Petitioner relies on Figure 5 of the 2006 904 Operating Manual, reproduced below, as disclosing the mentioned features. Pet. 35.



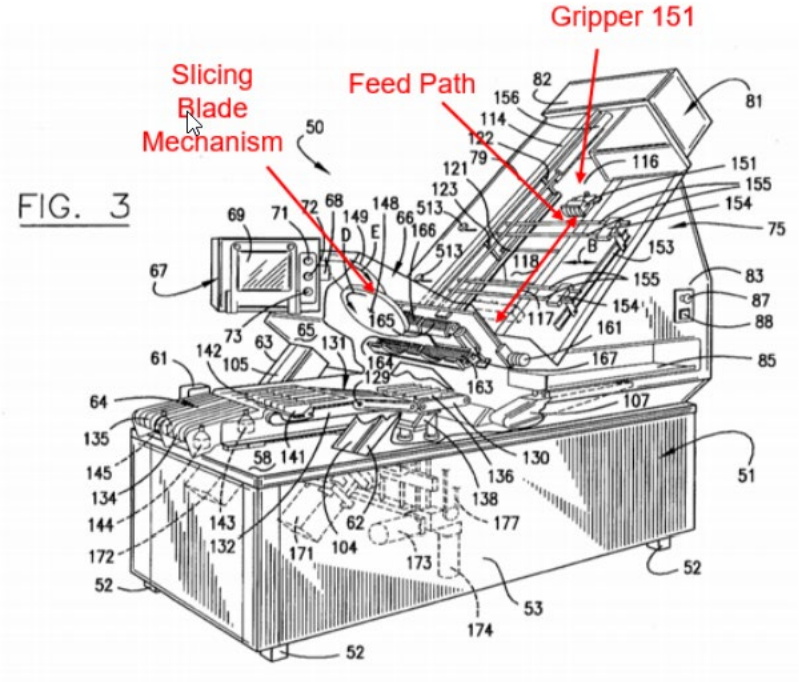
EX1005, FIG. 5 (annotated).

Figure 5 of the 2006 904 Operating Manual, shown above as annotated in red by Petitioner, shows the timing belt, product conveyor, food gripper, upper product guide, and slicing blade. Ex. 1005, 14, Fig. 5.

Petitioner contends that the product holder, upper product guide, and related actuators form the claimed "food article feed apparatus" because they function to feed the food to the slicing blade. Pet. 35. Petitioner contends elements of the food article feed apparatus (the product holder and upper product guide) are located above the food article load apparatus (comprising the product bed conveyor and timing belt). Pet. 35 (citing Ex. 1003 ¶ 107). Petitioner contends the 2006 904 Operating Manual discloses that the food article feed apparatus is thus disposed "over" the food article loading apparatus. *Id.*

Petitioner contends that Lindee discloses the part of limitation [1.2] of claim 1 reciting "a food article feed apparatus . . . having an upper conveyor

assembly with a driven endless conveyor belt used in cooperation with a food article gripper for moving the food articles along the food article feed path." Pet. 36. Petitioner contends Lindee discloses a food slicer that uses a food gripper mechanism to grip food products and advance the products down an inclined support surface to a slicing blade. Pet. 36 (citing Ex. 1006, 8:65–9:46; Ex. 1003 ¶ 109). To illustrate these features, Petitioner relies on Lindee's Figure 3 below. *Id.*

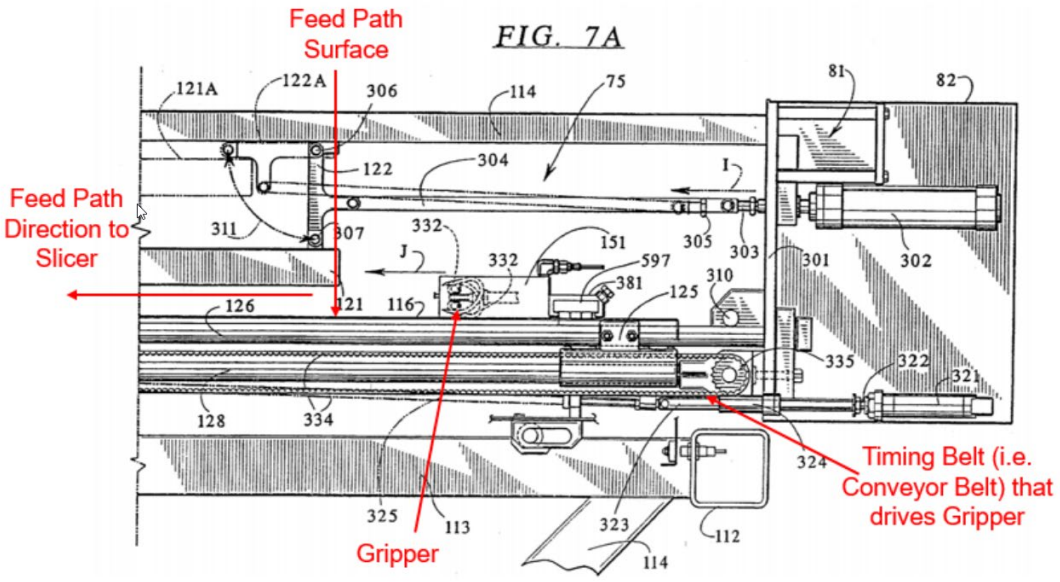


EX1006, FIG. 3 (annotated).

Lindee's Figure 3 above is annotated by Petitioner to show the gripper, feed path, and slicing blade mechanism. Pet. 36 (citing Ex. 1006, Fig. 3).

In Lindee's Figure 3 above, Petitioner annotates in red the gripper 151, feed path, and slicing blade mechanism. *Id.*

Petitioner also relies on Lindee's Figure 7A, reproduced below. Pet. 37.



EX1006, FIG. 7A (annotated).

Lindee's Figure 7A is annotated in red by Petitioner to show the timing belt, gripper, feed path surface, and feed path direction to slicer. Ex. 1006, Fig. 7A.

Petitioner contends Lindee discloses that the food grippers are driven along the feed path by timing belt 334. Pet. 36 (citing Ex. 1006, 18:32–35, 19:55–67). In Lindee's Figure 7A, Petitioner contends gripper 151 is mounted on extension 597 of carriage 125 which is connected to the upper run of timing belt 334. *Id.* at 36–37 (citing Ex. 1006, 18:18–22, 18:33–34). Petitioner contends the gripper is connected to and supported by carriage 125 which slides along shafts 126 and 128 as timing belt 334 carries carriage 125 along the feed path. Pet. 37 (citing Ex. 1003 ¶¶ 110–111). Petitioner further contends that the timing belt is stretched between idler sprocket 335 and drive sprocket 180, and defines an endless conveyor belt. *Id.* (citing

Ex. 1006, 18:34–37; Ex. 1003 ¶ 110). Petitioner contends that the foregoing excerpts of Lindee disclose "a food article feed apparatus . . . having an upper conveyor assembly with a driven endless conveyor belt used in cooperation with a food article gripper for moving the food articles along the food article feed path" in limitation [1.2] of claim 1. Pet. 37–38 (citing Ex. 1003 ¶ 112).

Petitioner contends a person of ordinary skill in the art would have been motivated to combine Lindee's timing belt gripper actuation system into the 2006 904 Operating Manual to provide mechanical details to achieve the disclosed function of the product holder (feeding the food loaves into the slicer). Pet. 44 (citing Ex. 1003 ¶ 137). Petitioner also contends the 2006 904 Operating Manual and Lindee are similar systems (Pet. 45); that the combination would have been simple substitution of one known element for another (Pet. 45–46); and use of a known technique to improve a similar device (Pet. 46). Petitioner further contends that a person of ordinary skill in the art would have been motivated to add Lindee's conveyor system into the upper portion of the 2006 904 Operating Manual's slicer because that is where the track is to support the product holder (Pet. 46–47).

Patent Owner contends that the combination of the 2006 904 Operating Manual and Lindee fail to teach or suggest limitation [1.2] of "a food article feed apparatus *disposed over* the food article loading apparatus having an upper conveyor assembly with a driven endless conveyor belt used in cooperation with a food article gripper for moving the food articles along the food article feed path." Resp. 45–49; Sur-Reply 16–18 (emphasis added). Specifically, limitation [1.2] of claim 1 requires that the feed apparatus has a conveyor belt, and that the conveyor belt must be "disposed over" the loading apparatus. Patent Owner argues that in Petitioner's

combinations (*see* Section 1.F), Lindee's conveyor belts are offset to the side of, and not "disposed over," the loading apparatus, which, according to Petitioner, includes Lindee's lift tray and corresponding actuators and support structure (Pet. 33), and the product bed conveyor and timing belt of the 2006 904 Operating Manual (Pet. 35). Resp. 45–49. In addition, Patent Owner contends Petitioner's combinations result in conveyor belts that are out the feed path, contrary to limitation [1.1] of claim 1 reciting "a food article loading apparatus with a lift tray assembly for moving food articles from a staging position to an elevated position at a beginning of a food article feed path." *Id.*

Patent Owner's contentions are supported by its expert, Dr. Howard, who testifies that one of ordinary skill in the art would not have combined Lindee's lower timing belt system with the upper system disclosed in the 2006 904 Operating Manual. Ex. 2019 ¶¶ 120–129. Dr. Howard states that Petitioner's expert, Dr. Hooper, bases his obviousness analysis on the incorrect assumption that the 2006 904 Operating Manual does not disclose how the product holders are translated along the feed path, when in fact the 2006 904 Operating Manual discloses a ball screw assembly to perform this function. *Id.* at ¶ 99. He further contends that Petitioner does not identify any advantages or address the difficulties of using Lindee's timing belt in the slicer disclosed in the 2006 904 Operating Manual. *Id.*

Dr. Howard testifies that in the slicer machine described in the 2006 904 Operating Manual, the ball screw actuator that drives the product holder is off to the side, and not disposed over the food article loading apparatus. Ex. 2019 ¶¶ 104–109.

To explain his opinion, he points to Figure 345 of the 2006 904 Operating Manual, reproduced below.

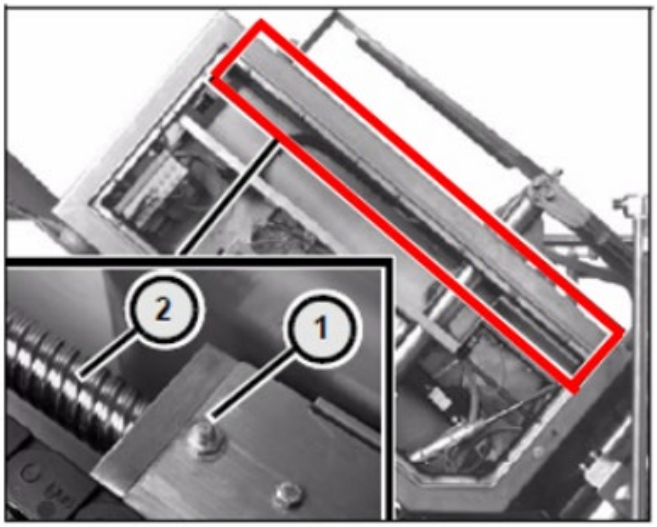


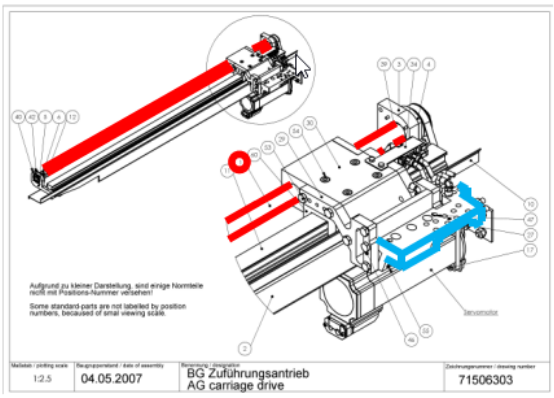
Fig. 345 Lubricating nipple of the ball screw spindle

EX1005, P. 273 FIG. 345 (ANNOTATED)

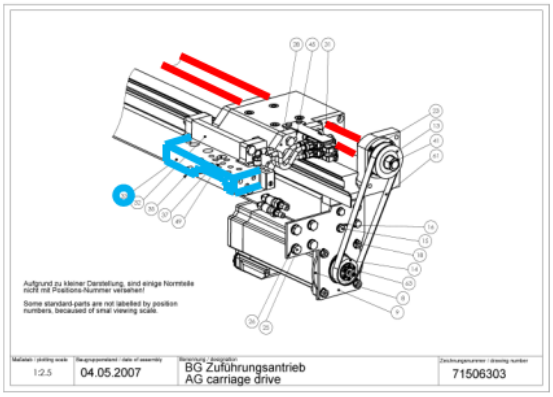
Patent Owner's annotated Figure 345 of the 2006 904 Operating Manual shows the location of the ball screw within the carriage housing. Ex. 2019 ¶ 104.

In Figure 345 above, Dr. Howard explains that the portion annotated in red is the location of the ball screw assembly within a carriage housing. Ex. 2019 ¶ 104 (citing Ex. 1005, 273, Fig. 345).

To explain how the ball screw translates a carriage connection to a rail supporting the product holders, Dr. Howard provides the following annotated figures from the 2006 904 Parts Manual (Ex. 2023).



EX2023, 006612 (ANNOTATED)

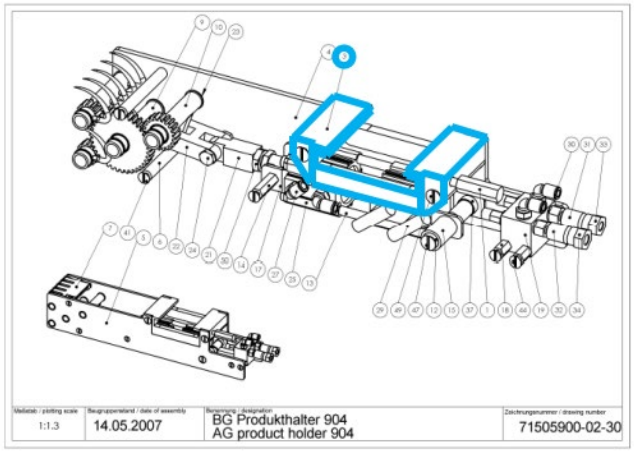


EX2023, 006613 (ANNOTATED)

Patent Owner's annotated Figures from the 2006 904 Parts Manual shows the ball screw (red) and carriage connection (blue). Ex. 2019 ¶ 107.

In the Figures above, the ball screw is annotated in red, and the carriage connection is annotated in blue. Ex. 2019 ¶ 107. The ball screw translates the connection along the length of the ball screw. *Id.*

Dr. Howard further testifies that the 2006 904 Parts Manual discloses a product holder shown in the Figure below. *Id.*

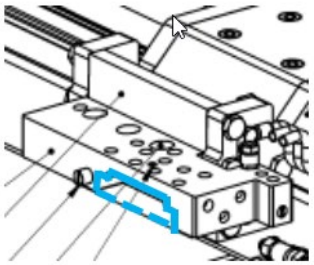


EX2023, 006727 (ANNOTATED)

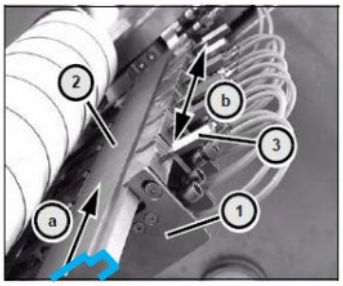
Patent Owner's annotated figure from the 2006 904 Parts Manual shows the clamping plate (blue) of the product holder. Ex. 2019 ¶ 107.

Dr. Howard explains that the figure above shows a clamping plate, annotated in blue, which clamps the product holder onto a support rail. *Id.*

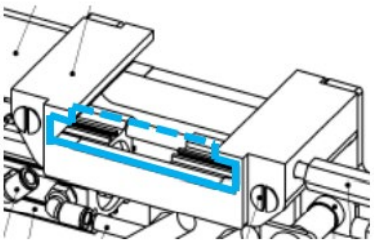
Dr. Howard testifies that a person of ordinary skill in the art would recognize that the shape of the support rail would fill the negative space of the carriage drive connection and the clamping plate of the product holder, as illustrated below. *Id.*



EX2023, 006613 (EXCERPT, ANNOTATED)



EX1005, P. 118, FIG. 123 (ANNOTATED)



EX2023, 006727 (EXCERPT, ANNOTATED)

Patent Owner's annotated figures from the 2006 904 Operating Manual and 2006 904 Parts Manual showing the carriage connection, rail, and clamping plate of product holder (annotated in blue). Ex. 2019 ¶ 107.

In the Figures above, the left figure is the carriage drive connection, the center figure shows the rail with product holder in place, and the right figure shows the clamping plate of the product holder. As the blue annotations show, these parts are shaped to fit together.

Dr. Howard's testimony establishes that the ball screw actuator which drives the product holder, is off to the side of the product holder and its feed path, separated by the rail to which the product holder is clamped. The ball screw is also off to the side of the upper product guide and product bed conveyor corresponding to a slot in the carriage housing, as shown below in Figure 1 of the 2006 904 Operating Manual.

1.1.1 Loading area/infeed area

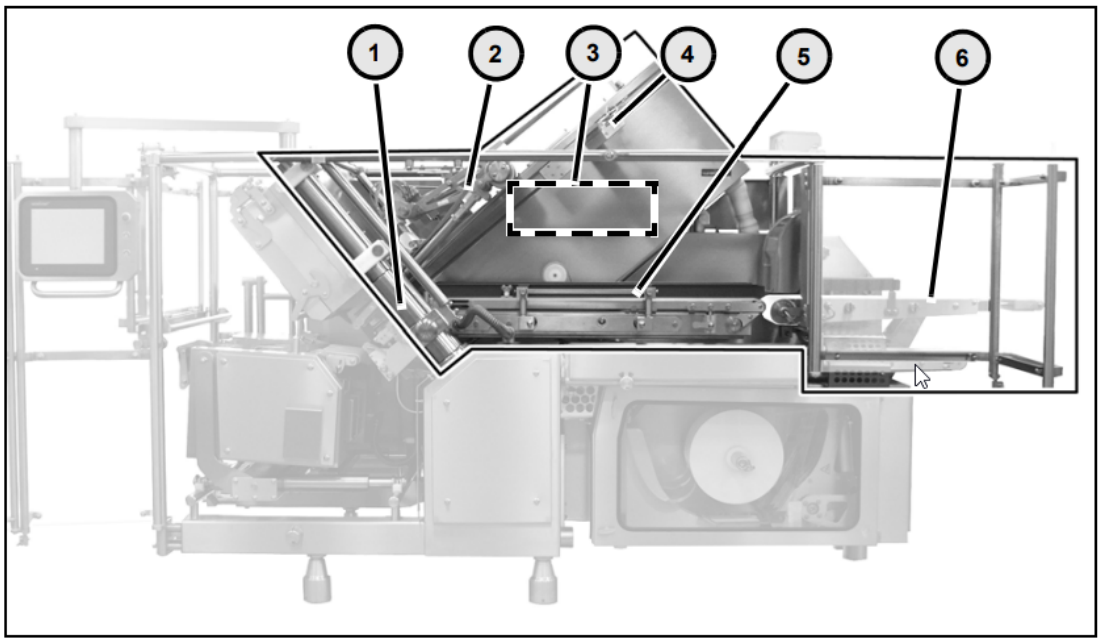


Fig. 1 Loading area/infeed area

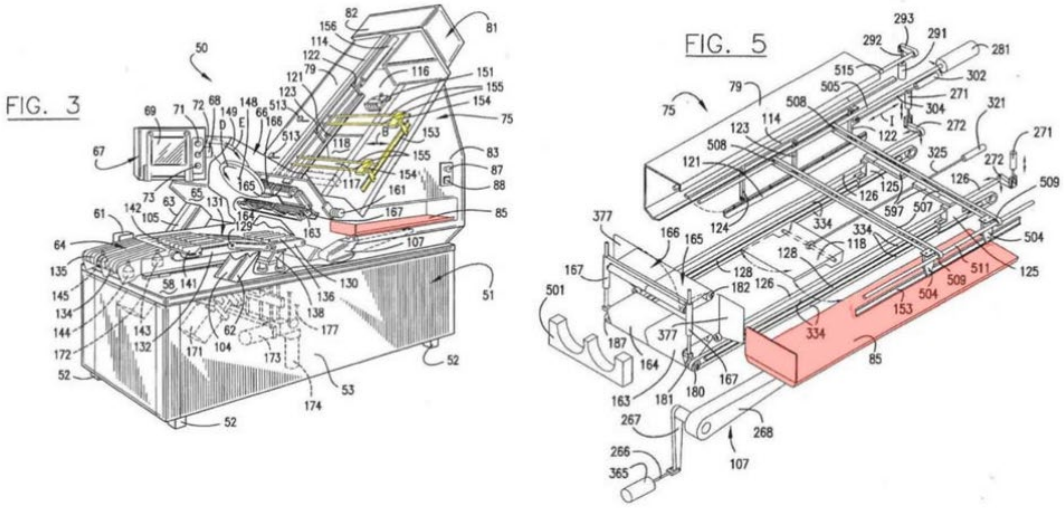
Figure 1 above from the 2006 904 Operating Manual shows various elements of the loading area of the 904 slicing machine. Ex. 1005, 10, Fig. 1.

In Figure 1 above, element 1 is the product bed conveyor; element 2 is the upper product guide; element 3 is the blank holder; element 4 is the product holder; element 5 is the product conveyor; and element 6 is the timing belt.

Petitioner's combination involves modifying the slicer of the 2006 904 Operating Manual with Lindee's timing belt system to replace the ball screw actuators of the 2006 904 Operating Manual. Pet. 44–47. Petitioner contends this modification would have been "a simple combination of known prior art elements (i.e., [Lindee's] timing belt actuation system and the 2006 904 [Operating Manual's] product holder) to achieve predictable results (i.e., actuation of the product holder along the feed path)." *Id.* at 45. Petitioner also contends the combination would have been the simple

substitution of Lindee's timing belt system for the 2006 904 Operating Manual's product holder actuation system. *Id.* at 45–46. Petitioner further contends the combination would have been the use of a known technique (use of Lindee's conveyor actuation system to allow for different feed rates for each of the grippers) to improve a similar device (the 904 slicer's grippers). Pet. 46. Petitioner further contends one would have been motivated to add Lindee's conveyor system to the upper portion of the 2006 904 Operating Manual's slicer that contains the track supporting the product holder. Pet. 46–47.

Dr. Howard explains that Lindee uses a sweep mechanism to push one or move loaves horizontally or laterally into the food article feed path of the slicing machine. Ex. 2019 ¶ 124. Dr. Howard provides annotated Figure 3 and Figure 5 from Lindee, shown below, to explain his opinion.



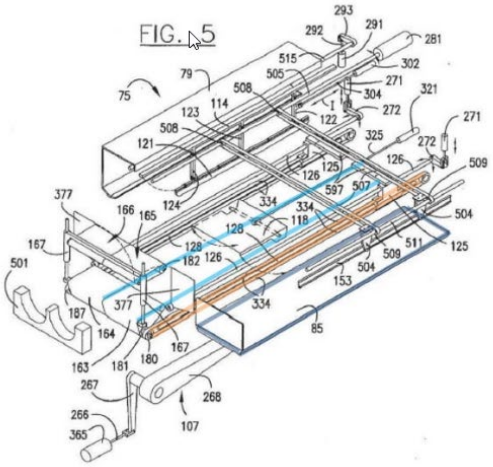
EX1006, FIG. 3 (ANNOTATED) **EX1006, FIG. 5 (ANNOTATED)**

Lindee's Figure 3 and Figure 5 annotated by Dr. Howard to show the sweep mechanism and lift tray. Ex. 2019 ¶ 124.

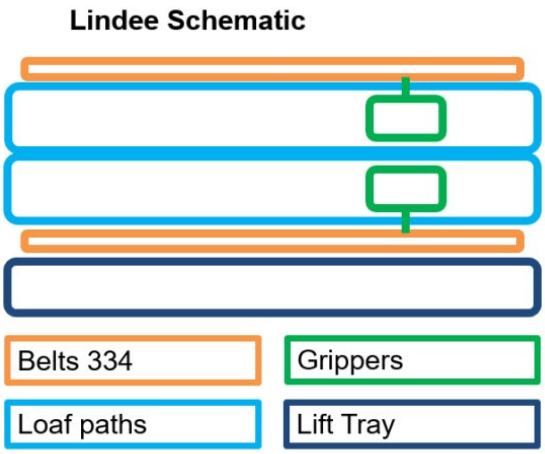
In Lindee's Figure 3, shown above, Dr. Howard highlights the sweep mechanism in yellow and the lift tray in red in its lowered position. Ex. 2019 ¶ 124. Dr. Howard also provides Lindee's Figure 5 to show the lift tray in its elevated position, disposed to the side of the feed path. *Id.*

Patent Owner notes that the background of the '436 Patent describes a slicer machine using a sweep mechanism (Ex. 1001, 1:63–65), and that the change to an in-line stack of components was an advantage recognized by the inventors (*id.* at 2:53–56). Sur-Reply 17. Thus, the '436 Patent distinguishes its invention over previous devices using a sweep mechanism like Lindee's.

Dr. Howard further provides the following illustrations to explain Lindee.



EX1006, FIG. 5 (ANNOTATED)



DEMONSTRATIVE SCHEMATIC

Lindee's Figure 5 and schematic of Figure 5 viewed from above illustrate timing belt 334 (orange), the loaf paths (blue), the lift tray 85 (dark blue), and the grippers (green). Ex. 2019 ¶ 125.

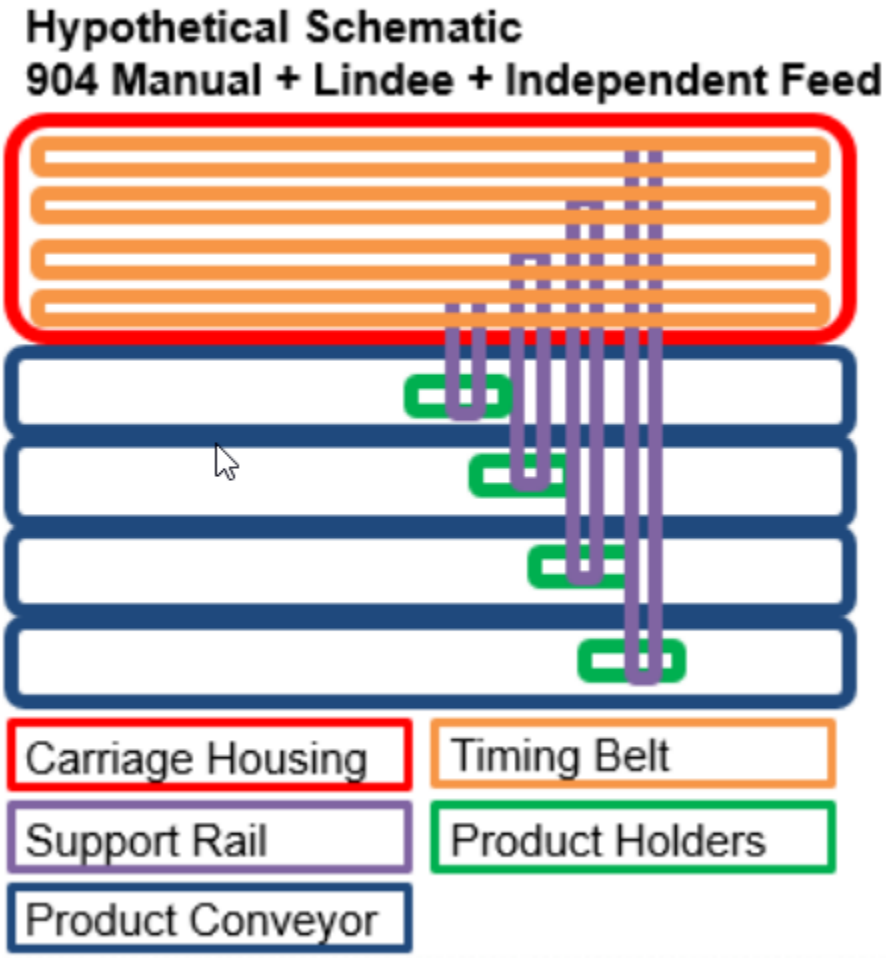
As shown in the above figures, Lindee's timing belt 334 (part of the feed apparatus) (orange) is not "disposed over" the loading apparatus (lift tray)

(dark blue) or over the feed path (blue). Ex. 2019 ¶ 125. Instead, Dr. Howard testifies that a person of ordinary skill in the art would understand that belt 334 driving the grippers in Lindee is located to the right of the feed path and to the left of the lift tray in Figure 5 annotated above.

Dr. Howard's testimony makes clear that Lindee's timing belt 334 (part of the feed apparatus) is not "disposed over" but is located to the side of the lift tray (part of the loading apparatus). Replacing the 2006 904 Operating Manual's ball screw actuator with Lindee's timing belt system would result in Lindee's timing belt system being off to the side of the 2006 904 Operating Manual's product conveyor according to the teachings of both references. Ex. 2019 ¶¶ 124–129.

We have construed "food article feed apparatus disposed over the food article loading apparatus" in limitation [1.2] to mean that the feed apparatus (including Lindee's timing belt system) must be "positioned above and in vertical and lateral alignment with" the food article loading apparatus (the 2006 904 Operating Manual's product conveyor, timing belt, and related actuators and supporting structure). *See* Section III.C. Limitation [1.2] would not be satisfied if Lindee's timing belt system was positioned off to the side of the 2006 904 Operating Manual's product conveyor, timing belt, related actuators and supporting structure when used to replace or substitute for the 2006 904 Operating Manual's ball screws.

Dr. Howard illustrates Petitioner's combination resulting from combining known elements or simple substitution of Lindee's timing belts for the 2006 904 Operating Manual's ball screws in the following figure.



Patent Owner's demonstrative schematic shows the result of combining the teachings of the 2006 904 Operating Manual and Lindee together as viewed from above.
Ex. 2019 ¶ 127.

In the schematic above, red indicates the carriage housing; orange indicates the timing belts (part of the asserted feed apparatus); purple indicates the support rails (part of the asserted feed apparatus); green indicates the product holders (part of the asserted feed apparatus); and blue indicates the product conveyors (part of the asserted loading apparatus), as viewed from above. As shown, Lindee's timing belts replace the 2006 904 Operating Manual's ball screws in the carriage housing positioned to the side of the product

conveyor. In this configuration, Lindee's timing belts (part of the asserted feed apparatus), are not "disposed over" the product bed conveyor (part of the asserted loading apparatus). Though positioned at a higher elevation than the product bed conveyor, Lindee's timing belts are not in vertical or lateral alignment with the product bed conveyor.

Consequently, the resulting configuration would not satisfy limitation [1.3] of claim 1 of "a food article feed apparatus disposed over said food article loading apparatus" under our construction of "disposed over" which requires that the food article feed apparatus and its upper conveyor assembly with conveyor belts and grippers (see limitation [1.2] of claim 1) are "positioned above and in vertical and lateral alignment with" the lift tray assembly of the food article loading apparatus. In the combination of the 2006 904 Operating Manual and Lindee, the feed apparatus including Lindee's timing belt system and grippers are not "disposed over" (i.e., "positioned above and in vertical and lateral alignment with") the loading apparatus including the product conveyor, timing belt, associated actuators, and supporting structure of the 2006 904 Operating Manual (*see* Pet. 32) or the lift tray and its actuators and support structure in Lindee (*see* Pet. 33)).

In the Reply, Petitioner proposes that one of ordinary skill in the art could extend the upper product guide of the 904 slicer and clamp grippers to the bottom run per Lindee's teachings. Reply 14. However, no such modification was proposed in the Petition. *See* Pet. 32–33. We do not consider this new argument as it is not within the proper scope of Petitioner's Reply. *See* 37 C.F.R. § 42.23(b); Consolidated Trial Practice Guide ("TPG"[6]), 73–75.

[6] https://www.uspto.gov/TrialPracticeGuideConsolidated.

In addition, Petitioner does not explain how the extended upper product guide would drive the grippers independently according to Lindee, and also maintain downward pressure on the food product to facilitate even transport into the slicing area, which the 2006 904 Operating Manual teaches is the purpose of the upper product guide. Ex. 1005, 15, 23. In essence, Petitioner's proposed modification requires the upper product guide to perform the two functions when it was designed for only one function without providing any detail to explain how modification for two functions would have been accomplished.

Petitioner argues against Patent Owner's arguments that putting Lindee's belt drive system into the 904 slicer would "turn Lindee's timing belt on its head" and require further modification to the drive system. Reply 12–14. Petitioner contends Patent Owner's arguments are based on a legally flawed bodily incorporation of the teachings of one reference into the other. Reply 12–14. Petitioner argues that a conveyor is not dependent on a specific orientation with respect to gravity; that Lindee's conveyor belt system is used for the same purpose in Lindee as it is in the combination; and that the upper product guide of the 2006 904 Operating Manual is a multi-lane conveyor. *Id.* at 12–13.

Petitioner's argument appears to the based on *In re Keller*, which states

> [t]he test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference, nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.

In re Keller, 642 F.2d 413, 426 (CCPA 1981).

We disagree that Patent Owner's arguments are based on bodily incorporation. Dr. Howard testifies that a person of ordinary skill in the art would not have combined the 2006 904 Operating Manuals and Lindee because of the lack of any advantage in doing so, as well as the difficulties that would be posed thereby. Ex. 2019 ¶ 99. But if one were to attempt such a combination, Dr. Howard recognizes that the 2006 904 Operating Manual's ball screws and Lindee's timing belts perform the same function of translating food grippers to drive food articles along their feed paths, so one could hypothetically combine the 2006 904 Operating Manual and Lindee by substituting the timing belts for the ball screws. Ex. 2019 ¶¶ 114–115, 120–121. Further, he perceives that the logical place to position the timing belt would be off to the side of the product conveyor according to the teachings of both the 2006 904 Operating Manual and Lindee. *Id.* He also recognizes that independently driving the food grippers requires multiple timing belts. *Id.* ¶ 122. Thus, Dr. Howard's testimony (and Patent Owner's corresponding arguments) does not merely take the specific mechanisms taught in the references and seek to bodily incorporate them into one another without considering routine adaptations one of ordinary skill would have used to permit them to function together. Rather, Dr. Howard's view of the configuration resulting from combining the 2006 904 Operating Manual and Lindee (see above figure) is entirely consistent with the teachings of both references, which place the conveyor belts to the side of, and not "disposed over," the lift tray.

Petitioner also argues that the 2006 904 Operating Manual does not disclose that actuation system for moving the product holders, and that one of ordinary skill in the art would have sought out additional information,

which would have been led one to Lindee's timing belt system. Reply 15. Contrary to Petitioner's assertion, however, the 2006 904 Operating Manual does disclose a ball screw drive system, as Dr. Howard explains with reference to the 2006 904 Parts Manual. Ex. 1005, 273–274. In this regard, we note that it is permissible for Dr. Howard to use the teachings of the 2006 904 Parts Manual to explain the teachings of the 2006 904 Operating Manual. *Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1372–73 (Fed. Cir. 2019) (one reference may be used to explain the teachings of another reference used in a petition challenge). Dr. Howard's expert testimony is entitled to more weight because it is consistent with the 2006 904 Operating Manual and 2006 904 Parts Manual considered as a whole, as opposed to Petitioner's argument which selectively considers the 2006 904 Operating Manual and 2006 904 Parts Manual and ignores or overlooks their teachings concerning ball screw drive systems. *Application of Wesslau*, 353 F.2d 238, 241 (CCPA 1965) ("It is impermissible within the framework of . . . 103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art.").

Petitioner argues that even under Patent Owner's "flawed construction," the food article feed apparatus (product holder, upper product guide, and associated actuators in the 2006 904 Operating Manual (*see* Pet. 40)) is located above the food article loading apparatus (the product conveyor, timing belt, associated actuators and supporting structure in the 2006 904 Operating Manual (*see* Pet. 39)). Reply 17–19. Petitioner's view is that the term "disposed over" merely means "higher than or above." *Id.* at 16–17. We have already addressed that the proper construction of "disposed

over" in limitation [1.2] means that the food article feed apparatus is "positioned above and in vertical and lateral alignment with" the food article loading apparatus and its lift tray assembly (see limitation [1.1]). *See* Section III.C. Petitioner's argument is unpersuasive.

Petitioner further argues that the Petition explained that a person of ordinary skill in the art would have been motivated to locate Lindee's belt drive system for the grippers in the upper portion of the 904 slicer because that is where the product holders (the grippers) and their support structure are located. Reply 18 (citing Pet. 46–47, 53). Petitioner contends it never suggested implementing belts that were not directly above the loading apparatus. *Id.* at 18–19.

From Figure 1 of the 2006 904 Operating Manual, *supra*, it is clear that the ball screw actuator (part of the feed apparatus) for the product holder (food article gripper) is not "positioned above and in vertical and lateral alignment with" the product conveyor (part of the loading apparatus), but is instead laterally offset when the slicer is viewed from above. Replacing or substituting the ball screw actuator with Lindee's timing belts would result in the timing belts being laterally offset from the product conveyor, as Dr. Howard explained in his schematic above. Again, both the 2006 904 Operating Manual and Lindee teach that the conveyor belts which drive the grippers are off to the side of the lift tray assembly.

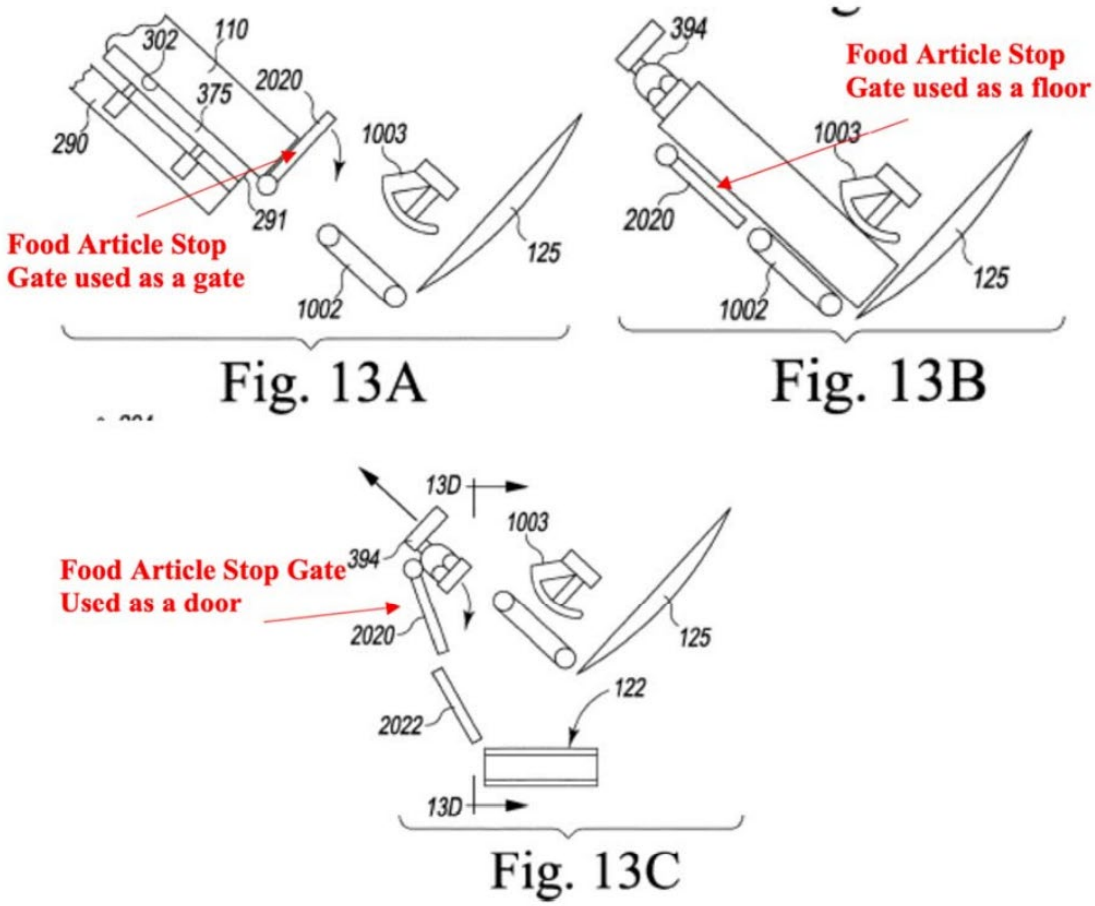
To summarize, limitation [1.2] of claim 1 recites "a food article feed apparatus disposed over said food article loading apparatus." Ex. 1001, 10:61–62. The combination proposed in the Petition results in the Lindee's timing belt system replacing or substituting for the 2006 904 Operating Manuals' ball screws, which are laterally offset from the 2006 904 Operating Manuals' product conveyor. In this combination, Lindee's

conveyor belts (part of the food article feed apparatus according to the Petition) would not be "disposed over" (i.e., "positioned over and in vertical and lateral alignment with") the 2006 904 Operating Manual's product conveyor (part of the food article loading apparatus according to the Petition), as required by limitation [1.2] of claim 1. Consequently, the Petition does not show that limitation [1.2] of claim 1 would be satisfied by combining the 2006 904 Operating Manual and Lindee.

> *b) "wherein the food articles are supported in position along the food article feed path by at least the food article stop gate when the lift tray assembly is moved when in its elevated position"*

Limitation [1.5] of claim 1 is reproduced in the above heading. Ex. 1001, 11:3–6. Petitioner contends that the 2006 904 Operating Manual discloses this limitation. Pet. 42.

This limitation corresponds to Figure 13B of the '436 Patent where food article stop gate 2020 acts as a floor supporting the food article in position along the feed path when the lift tray assembly has been lowered from its elevated position. Figure 13B is reproduced along with Figures 13A and 13C below, as annotated by Dr. Howard.



EX1001, FIG. 13A, 13B AND 13C (ANNOTATED)

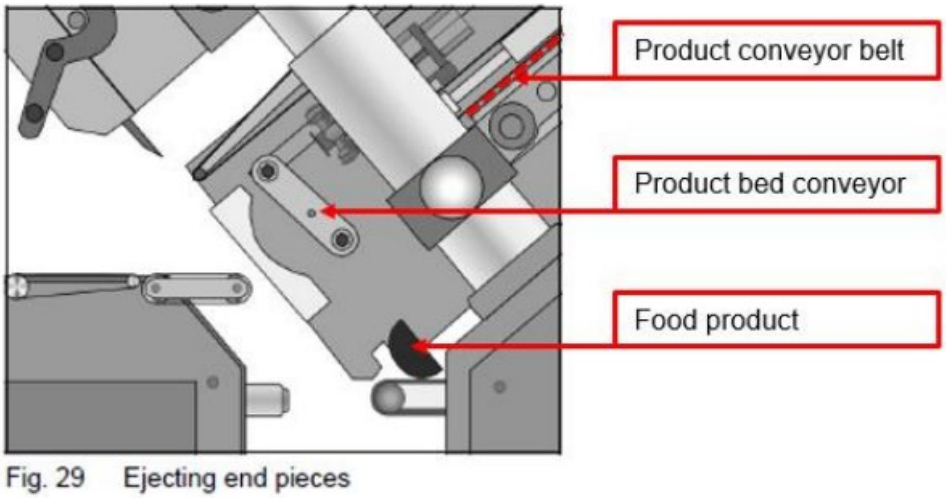
Figures 13A, 13B and 13C, as annotated by Dr. Howard, show food article stop gate 2020 in gate, floor, and door configurations.
Ex. 2019 ¶ 61; Ex. 1001, 9:58–63.

Ex. 2019 ¶ 61. In Figure 13B above, food article stop gate 2020 acts a floor supporting the food article in position as it is driven along its feed path to the slicer. *Id.*

Petitioner contends that the 2006 904 Operating Manual's product bed conveyor (corresponding to the claimed "stop gate") supports the food product by forming a floor, regardless of the position of the product conveyor (corresponding to the claimed "lift tray assembly"). Pet. 42 (citing Ex. 1005, 21, Fig. 10; Ex. 1003 ¶¶ 127–128).

Patent Owner contends that Petitioner does not allege that the 2006 904 Operating Manual teaches a stop gate that acts as a floor to support the food article when the lift tray assembly is moved *from* its elevated position. Resp. 52 (citing Ex. 2019 ¶¶ 135–137). Instead, Patent Owner contends that Petitioner only alleges that the stop gate supports the lift tray assembly when the lift tray assembly is moved *to* its elevated position. Resp. 52 (citing Pet. 42).

To support its contentions, Patent Owner relies on Figure 29 of the 2006 904 Operating Manual, shown below with Patent Owner's annotations indicated in red. Sur-Reply 24.



(EX1005, Fig. 29 (annotated).)

Figure 5 of the 2006 904 Operating Manual shows the product conveyor belt and product bed conveyor during ejection of the end piece of the food product. Ex. 1005, 40, Fig. 29.

In Figure 29 of the 2006 904 Operating Manual, the product bed conveyor (corresponding to the claimed stop gate) has moved to the door position to

allow the end piece to fall out of the machine for ejection. In this position, as shown in Figure 29, the product bed conveyor no longer supports the food product along the feed path. At the same time, Figure 29 shows that the product conveyor remains in its elevated position. As the product conveyor has not moved when in its elevated position when the product bed conveyor still supports the food product, the 2006 904 Operating Manual does not teach or suggest limitation [1.5] of claim 1 reciting "wherein the food articles are supported in position along the food article feed path by at least the food article stop gate when the lift tray assembly is moved when in its elevated position."

Petitioner further argues that the 2006 904 Operating Manual discloses that the product bed conveyor supports a food article while the product conveyor lowers from its elevated position, allegedly disclosing limitation [1.5]. Reply 23–26 (citing Ex. 1005, Figs. 10, 28, 227; Ex. 1064, 37). However, the figures of the 2006 904 Operating Manual that Petitioner relies on either (1) do not show the food article in the slicer machine; or (2) do not show the product conveyor. Consequently, we find this evidence insufficient to show that the product bed conveyor of the 2006 904 Operating Manual supports the food article when the product conveyor moves from its elevated position.

Petitioner contends that it "may introduce new evidence after the petition stage . . . if it is used 'to document the knowledge that skilled artisans would bring to bear in reading the prior art identified as producing obviousness.'" Reply 28 (citing *Anacor Pharms., Inc. v. Iancu*, 889 F.3d 1372, 1380–81 (Fed. Cir. 2018)). Petitioner contends that a 2008 promotional internet video for the 904 slicers shows that these slicers were actually operated in accordance with Patent Owner's claim construction.

Reply 28–30 (citing Ex. 1051 ¶¶ 98–101, 104–107). Petitioner does not explain what construction of Patent Owner it is referring to. Nevertheless, Petitioner contends screen shots from the video show the product conveyor lowering as the product holders are advancing to the slicing station. *Id.* at 28–30 (citing Ex. 1068 at 1:07, 1:09, 1:11).

Patent Owner contends that the Exhibit 1068 video does not document the knowledge that skilled artisans would bring to bear in reading Petitioner's prior art as producing obviousness. Sur-Reply 25. Patent Owner further contends that Petitioner does not make any assertion that a skilled artisan would have been aware of this video. *Id.* Patent Owner contends that this distinguishes this evidence from that relied on in *Anacor*, where an expert was already "familiar with" a published article before that article was introduced in the IPR. *Id.* at 26 (citing *Anacor*, 889 F.3d at 1381).

The Supreme Court has stated that *inter partes* review must proceed in conformance with the petition, and that the Director does not have license to depart from the petition and institute a different *inter partes* review of his own design. *SAS Institute v. Iancu*, 138 S.Ct. 1348, 1355–56 (2018). Petitioner essentially asks us to depart from the Petition by inserting new video evidence that is substantively different from certain parts of the 2006 904 Operating Manual that was relied upon in the Petition. Specifically, Figure 29 of the 2006 904 Operating Manual was relied upon in the Petition and shows the product conveyor is still elevated after slicing and during end piece ejection. *See* Pet. 6, 9, 40–41, 43, 66–67; Ex. 1005, 40, Fig. 29, *supra*. Petitioner now contends that the video shows the product conveyor lowering as the product holder is advancing, and food articles are presumably supported by the product bed conveyor. Reply 28–30. We decline, in effect, to revise the Petition with this video evidence.

Accordingly, the Petition does not show by a preponderance of the evidence that claim 1 of the '436 Patent is obvious under 35 U.S.C. § 103 over the combination of the 2006 904 Operating Manual and Lindee.

2. Claims 2–16

Claims 2–8 depend from claim 1. For the reasons stated above with respect to claim 1, the Petition does not show that claims 2–8 are unpatentable as obvious over the 2006 904 Operating Manual and Lindee.

Independent claim 9 differs from claim 1 by reciting independently driven and controlled endless conveyor belts. Ex. 1001, 11:39–41, 12:1–4. For limitations [9.3] and [9.7] of claim 9, the Petition refers back to the analyses for corresponding elements [1.2] and [1.5] of claim 1. Pet. 77, 79. For the reasons stated with respect to claim 1, we find that limitations [9.3] and [9.7] are not unpatentable as obvious over the combination of the 2006 904 Operating Manual and Lindee.

Claims 10–16 depend from claim 9. For the reasons stated above with respect to claim 9, claims 10–16 have not been shown unpatentable over the combination of the 2006 904 Operating Manual and Lindee.

C. Ground 2: Obviousness of Claims 1–16 Based on the 2010 904 Operating Manual and Lindee

Petitioner asserts that the "2010 904 Operating Manual is substantively identical to the 2006 904 Operating Manual" except that it adds detail related to the upper product guide that has separate conveyors and drives to permit the conveyors to be independently driven at different speeds. *See* Pet. 71, 77 (citing Ex. 1009, 166). Consequently, Petitioner's reliance on the 2010 904 Operating Manual in this ground is substantively the same as Petitioner's use of the 2006 904 Operating Manual discussed in the first ground discussed in Section V.B, except with respect to motivation

to combine. *See, e.g.*, *id.* at 72–74, 76–79 (referring back to ground based on the 2006 904 Operating Manual to explain how the 2010 904 Operating Manual discloses the limitations of claim 1). As to motivation to combine, Petitioner argues that the individual product guide conveyors of the 2010 904 Operating Manual provide additional motivation to incorporate Lindee's independent gripper conveyor drives. *Id.* at 74–75 (citing Ex. 1006, 9:18–22; Ex. 1003 ¶ 247). We find that the combination of the 2010 904 Operating Manual and Lindee fails to disclose the limitations [1.2] and [1.5] of claim 1 and limitations [9.3] and [9.7] of claim 9 for the same reasons described above in connection with our analysis of the combination of the 2006 904 Operating Manual and Lindee. *See* Section V.B. *supra*.

Accordingly, the Petition does not establish by a preponderance of the evidence that claims 1–16 are unpatentable as obvious over the combination of the 2010 904 Operating Manual and Lindee.

VI. MOTION TO EXCLUDE

Pursuant to 37 C.F.R. §§ 42.62 and 42.64, Patent Owner moves to exclude Exhibit 1051 ¶¶ 61, 95–107; Exhibit 1060 ¶ 36; and Exhibit 1068. Paper 59, 2. Patent Owner contends "Petitioner's Reply added a new obviousness theory, introduced new evidence to allegedly teach limitations missing from the Petition, and introduced evidence that contravenes the IPR printed publications requirement." *Id.* Petitioner filed an Opposition to the Motion to Exclude (Paper 60), and Patent Owner filed a Reply to Petitioner's Opposition (Paper 63).

For the most part, we agree with Patent Owner that Exhibit 1051 ¶¶ 61, 95–107; Exhibit 1060 ¶ 36; and Exhibit 1068 are new evidence submitted for the first time with the Reply. Reply 12, 14, 18, 24–30. This

evidence relates to Petitioner's proposed modification to extend the upper product guide in the 2006 and 2010 904 Operating Manuals (Ex. 1051 ¶ 61) discussed in Section V.B.1.a, *supra*; additional explanation for why the product bed conveyor of the 2006 and 2010 904 Operating Manuals supports a food article when the product conveyor moves in its elevated position (Ex. 1051 ¶¶ 98–102) discussed in section V.B.1.b, *supra*; and Petitioner's video evidence (Ex. 1051 ¶¶ 104–107; Ex. 1060 ¶ 36; Ex. 1068) discussed in Section V.B.1.b, *supra*. This evidence is proffered to make out or "gap-fill" a prima facie case of unpatentability, and it appears that it could have been submitted with the Petition. At least, Petitioner does not explain why it was not. Accordingly, we do not consider this new evidence in arriving at this decision. *See* TPG, 73–75.

Consequently, as we did not rely on any of the evidence that is the subject of Patent Owner's motion to exclude in arriving at our decision, we dismiss the motion to exclude as moot.

VII. CONCLUSION

We find that the Petition does not establish by a preponderance of the evidence that the 2006 904 Operating Manual or the 2010 904 Operating Manual constitute "printed publications" under 35 U.S.C. § 311(b). The Petition further does not show by a preponderance of the evidence that the challenged claims of the '436 Patent are unpatentable as obvious because at least limitations [1.2] and [1.5] of claim 1 and limitations [9.3] and [9.7] of claim 9 of the '436 Patent are not taught or suggested by the prior art references.

In summary,

Claims	35 U.S.C. §	Reference(s)	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–16	103	2006 904 Operating Manual, Lindee		1–16
1–16	103	2010 904 Operating Manual, Lindee		1–16
		Overall Outcome		1–16

VIII. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–16 of the '436 Patent have not been shown to be unpatentable;

FURTHER ORDERED that Patent Owner's motion to exclude is *dismissed* as moot;

FURTHER ORDERED that the parties shall jointly submit a proposed redacted version of the Final Written Decision (Paper 66) as a confidential Exhibit within 14 days of this Decision. In the absence of such a proposal, at the expiration of 14 days from the date of this Decision, the entirety of the Final Written Decision will be made available to the public.

FURTHER ORDERED that any party seeking judicial review must comply with the notice and service requirements of 37 C.F.R. § 90.2.[7]

[7] Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this Decision, we draw Patent Owner's attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. *See* 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

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